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International Terminal Sediment Data Report

Prepared for
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Final

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1.0 Introduction

Schnitzer Steel Industries, Inc. (Schnitzer) operates the Burgard Industrial Yard located near the 12000 block of North Burgard Road in north Portland, Oregon. The International Terminals (IT) slip and associated berths are located adjacent to the Burgard Industrial Yard. The property was originally developed as a shipyard in 1939 and 1940. For the last three decades the slip has supported commercial marine repair, fabrication, construction and dismantling services. Currently these berths support metal recycling operations as well as barge and ship dismantling operations. These berths are also used to import bulk cargo such as manganese, pig iron, steel coils and steel slabs.

The slip contains three berths and 1,680 feet of docking facilities. Berths 1 through 3 are located within the International Terminals slip (IT Slip) adjacent to the Burgard Yard. Berths 4 and 5 are located on the river side of facility. The slip and associated berths are an existing facility and have been maintained under previous maintenance dredging permits (U.S. Army Corps of Engineers Section 10/404 Permit #199100099 and Oregon Division of State Lands Removal-Fill Permit No. 1055).

Due to shoaling at the mouth of the slip and within the berths, there is a critical and urgent need to perform maintenance dredging for these facilities. In the fall of 2002 an incoming ship was required to dock and offload several thousand tons of cargo prior to arrival at the IT Slip to prevent grounding. Subsequent to that event, a meeting was held with the Columbia River Pilots (Pilots) to determine the minimum acceptable conditions needed for safe navigation access and berthing in the slip given the draft, length, and width of vessels that are expected use this facility over the next five years. The proposed dredge prisms were developed based on the suggestions from the Pilots in addition to other engineering considerations such as slope stability.

In anticipation of maintenance dredging, sediment sampling was performed from March 11 through March 13, 2003. Due to a lack of available data on sediment quality, this advance sediment sampling was necessary to aid in dredge design considerations. It was also necessary to gather additional sediment data to characterize sediment quality for the proposed dredging. Data obtained from this sampling event was used to evaluate sediment quality consistent with the guidance found in the Dredged Material Evaluation Framework (DMEF) (USACE 1998).

The purposes of this sampling and analyses project include:

- Provide sediment quality data to allow refinement of dredge design so that the post-dredge surface will be acceptable.
- Assess the appropriateness of DMEF Site Ranking for this project.
- Provide data to support a joint federal and state permit application with acceptable dredge design and site ranking.

2.0 Methods

2.1 CORE COLLECTION PROCEDURES

Sediment sampling was conducted on March 11, 12, and 13, 2003, with mobilization on March 10th and demobilization on March 14, 2003. Sediment cores were taken from six locations along the riverfront and within the IT Slip. Core coordinates are listed in Table 2.1, core locations are shown on Figure 2.1. Cores SDC-SS01 and SDC-SS02 are located within Berths 4 and 5. Cores SDC-SS03 through SDC-SS06 are located within the IT Slip.

Sediment core locations were determined by differential GPS (DGPS) methods relative to Oregon State Plane North Zone North American Datum 1927 (NAD27). Elevations during sampling were determined by reading a surveyed tide gauge immediately prior to sampling. The tide gauge is located at Terminal 4 (adjacent to the IT Slip) and reads in Columbia River Datum (CRD).

Cores were taken with a *MudMole*TM pneumatic core sampler. The sampler consists of a square 4-inch aluminum core tube attached to a pneumatic-powered driving assembly with a quick-release pin. Core tubes 21 feet in length were used at all sampling locations. The tubes were cleaned before fieldwork was initiated and the ends were sealed to prevent contamination. Because core tubes are single-use, these measures minimized recontamination risks that can occur when sampling equipment is reused for multiple locations.

The *MudMole*TM pneumatic core samplers were driven into the sediment with a linear pneumatic hammer that delivers approximately 300 blows per minute. The bottom of each core tube is fitted with a hinged core catcher to prevent loss of sediment during extraction. Air to operate the pneumatic corer is provided by an industrial air compressor located on the deck of the sampling vessel. The sampler was operated by personnel on the sampling vessel in shallow waters and by a diver in deeper waters.

After reaching the selected sampling location, the core sampler was lowered to the bottom using a winch. The operator turned on the air hammer once the core tube entered the sediment. At approximately 2-foot intervals, the operator suspended the driving operation and measured the penetration and recovery of the core. Internal recovery was measured by lowering a weighted tape measure inside the core tube until the weight contacted the surface of the sediment. The penetration of the core tube was then measured using a second tape measure and reference marks on the outside of the core tube. Internal recovery and penetration information was recorded during the drilling operation. After driving the core to the desired depth (or until refusal), the air hammer was turned off and a final set of penetration and recovery measurements was taken. The actual sampling position was logged and a lifting winch was used to extract the core.

After the core was extracted, the distance from the top of the core tube to the surface of the sediment was measured on-deck to account for any movement or loss of sediment in the core tube. This top-of-sediment measurement along with the paired penetration and recovery

measurements was used to account for thinning and compaction of the sediments during driving, and was entered into a spreadsheet program to generate a bore log (Appendix A).

A single core was collected and sampled at each sampling station. Cores were driven to the proposed sample depth or until refusal. If penetration or recovery was insufficient to meet the study needs, a second and sometimes third attempt was made to obtain a satisfactory core.

2.2 SAMPLE COLLECTION

Cores were processed immediately upon collection. Unprocessed cores held more than 4 hours were chilled with ice.

Core-tubes were processed at an upland staging area within 8 hours of extraction. Cores that remained unprocessed 4 hours after sampling were stored on ice. Cores were transported and stored horizontally, and one core was processed and handled at a time. The core tubes were placed on sawhorses and oriented with the hinged side of the core catcher on the bottom. The uppermost side of the core tube was removed using a small saw. The depth of the cut on the saw was set to just slightly greater than the wall thickness of the aluminum tube. Approximately 1 cm (0.38 inch) of sediment was removed from the exposed sediment surface with a decontaminated stainless steel scraper. The surface layer of sediment was removed starting at the bottom of the core tube and moving toward the top to minimize the potential contamination of clean, deeper layers with material from shallower, potentially more contaminated layers.

A qualified field geologist logged each core for Universal Soil Classification and noted the presence of any soil structures, odors, or visible oil sheens. Sediment descriptions and the interpreted *in situ* depths of each sediment horizon were transcribed into a summary core log (Appendix A).

Stainless steel plates were inserted between each sampling segment, and sediment from each segment were collected from the center of the core starting at the inserted plate marking the top of a segment and extending downward until sufficient sample volume was obtained. Sediment touching the sides of the core tube was left in place, thus minimizing the potential for cross-contamination from overlying sediments. The distance down the tube was recorded to provide information on the actual collection interval for each sample.

2.2.1 Sample Processing

Samples were processed according to the scheme detailed in this section. Overall, the goal was to create two composites per core. One composite, composed of an interval from the mudline to the bottom of the proposed dredge cut, characterizes the material to be removed during maintenance dredging. The bottom composite, usually consisting of the top interval "exposed" by the proposed dredge cut plus the next lower adjacent interval, characterizes the post-dredge surface sediments. Note that the descriptions below represent targets. In some cases less material was collected due to volume considerations in core segments. However, sufficient material was collected for each core to perform required analyses.

- **Top Core Segment:** The first core segment reached from the top of the sediment to a depth corresponding to an elevation of -38 ft CRD or a depth comparable to the bottom of the proposed dredge cut for that area. A target sample volume of 2.5 liters was collected from this core segment (Section 2.2), placed in a clean stainless steel bowl and homogenized with a mechanical mixer. Alternate spoonfuls of sediment were then partitioned between four 16-ounce and two 8-ounce glass jars. The two 16-ounce and two 8-ounce jars were designated for analytical analysis; the other two 16-ounce jars were archived for 90 days at -20° C pending further analysis.
- **1-foot Core Segments:** The remaining core was sectioned into 1-foot long core segments. Approximately 1.25 liters of sediment was removed from each core segment (Section 2.2). The material from a specific core segment was homogenized in a clean stainless steel bowl, and then placed into three 8-ounce jars and one 16-ounce glass jar using alternating spoonfuls. Each of these core segments were designated by a six-digit number corresponding to the top elevation and bottom interval of the core segment. The two 8-ounce jars were designated for PAH screening analysis; the 16-ounce jar was archived at 4°C for later compositing; the third 8-ounce jar was archived for 90 days (frozen) pending further analysis or reanalysis.
- **Compositing Core Segments:** After the initial testing for PAHs (Section 2.3.1), one additional core segment was created per core at the lab by compositing the 16-ounce jars from the 1-foot core segments.

2.2.2 Sample Designations

All core samples were assigned a unique identification code. A hyphenated, alphanumeric code consisting of a media code and a location code along with interval sampling information was used for core sample designations. Format used for this project was as follows: SDC-SSXX-YYYYYY, where SDC represented sediment media of a core type. SS indicated project affiliation, and XX indicated the core number. The 6-digit sample-depth identifier YYYYYY indicated the sample interval. For example, 003004 would indicate the depth interval from 3 to 4 feet.

Core summary logs contained in Appendix A show sample identifications (located under column labeled "Primary Sample ID").

2.3 LABORATORY METHODS

Analytical testing was conducted by Columbia Analytical Services, Inc. (CAS) in Kelso, Washington.

2.3.1 PAH Screening of 1-foot Core Segments

One of the goals of this sediment characterization project is to characterize the post-dredge sediment surface quality. Information was not previously available that provided data showing depth to "native" sediments, nor was any information available that provided data showing

sediment quality changes with depth. Since PAHs can occur in both anthropogenic (combustion of petroleum products, urban run-off) and natural (forest fires) sources, PAHs can be viewed as a conservative tracer of potential sediment quality. Figure 2.2 illustrates sample intervals subject to PAH-screening analyses. Briefly, this PAH-screening involved performing EPA method 8270 (USEPA 1994) gas chromatography coupled to mass spectrophotometry and reporting only total PAHs with an urgent turnaround time.

2.3.2 Dredged Material Evaluation Framework Analytes

Analytical procedures for the chemical analysis of sediment samples collected during this investigation will include a determination of grain size, total solids, total organic carbon, metals, tributyltin, semivolatiles (organics, phthalates, phenols and miscellaneous extractables), chlorinated pesticides, chlorinated hydrocarbons and PCBs (Table 2.2). Standard USEPA sample preparation, cleanup, and analytical methods are used for these chemical analyses.

There were minor deviations from DMEF-recommended analyses for the following reasons:

- Open water disposal was not considered a likely option for these sediments.
- Landfill disposal and/or reuse of sediments as upland fill were regarded as the most likely options.
- Conventional parameters lack sediment quality criteria guidance.

Therefore, total sulfides, ammonia, and total volatile solids were not analyzed. These parameters are most relevant to open water disposal and possible tiered biological evaluations. DMEF guidance was adhered to for all other analytes.

DMEF guidance recommends quantifying tributyltin in porewater (i.e. interstitial water). However, the Weston investigation found elevated levels of organotins at station SD012, near the IT slip mouth, in sediments (i.e. solids, not porewater). Furthermore, Puget Sound studies have indicated a lack of correlation between porewater values and bioaccumulation potential (EVS 1999). Therefore, TBT was not measured in porewater, but instead was measured in sediments (solids).

2.3.3 Geotechnical Classification

Sediment samples were classified and described in accordance with the Unified Soil Classification System, as defined in ASTM D-2488-93 and D-2487-93 by a qualified field geologist.

2.4 WASTE MANAGEMENT

All sediment derived during this sampling was placed in the proper containers, labeled, and disposed of by Schnitzer in accordance with applicable regulations.

3.0 Results

3.1 CORE COLLECTION

Seven cores were collected from March 11 through March 13, 2003. Locations are shown on Figure 2.1; Table 2.1 lists station coordinates. Appendix A contains core summary logs describing the sediment types, stratigraphic contacts, and sample interval identifications for each of the cores. In general, penetration was difficult due to the density of the packed river sand. Multiple coring attempts were made at most stations.

An additional proposed station, SDC-SS07, was abandoned due to poor core recoveries. SDC-SS06 is considered representative of this area. SDC-SS03R2 was adjusted in the field to sample deeper sediments and thus "overshoot" the proposed post-dredge surface to ensure that depth to native sediment was fully understood (i.e. that another geologic layer did not occur at depth). SDC-SS04 did not reach target penetration to fully characterize the post-dredge surface but is considered representative of material to be removed.

3.2 CORE GEOLOGY

Appendix B contains extrapolated stratigraphic cross sections with core locations. In general, on the river side, layers of fine silty clay or sandy silt with thicknesses ranging from 6 to about 12 feet overlay a continuous layer of dense fine sand with trace silt. This silty clay or sandy silt may be representative of more fine-grained material deposited by the river. Within the slip berths, a similar fine sand layer is overlain by a thin silty sand or fine sandy silt layer, and then overlain by similar fine sand at the surface. The thin silty sand deposit may represent an episodic event (i.e. flood).

In general it appears that the dense fine sand represents "native" sediments since no deeper layers were detected. Furthermore, this dense fine sand is low in organic content and contains at most, only trace contaminant detections.

3.3 SEDIMENT CHEMISTRY

Appendix C contains the Chain of Custody forms for samples analyzed during this investigation.

3.3.1 Analytical Results

Table 3.1 shows results of the conventional and chemical analyses. Table 3.2 shows PAH-screening level results. Figure 2.2 shows intervals subjected to PAH-screening and subsequent composite generation.

3.3.2 Data Quality Review

A Level 1 data quality review was conducted on each analytical batch analyzed for this investigation. A summary of the data quality review is presented below; a complete review is presented in a Data Validation Report, attached as Appendix D. Sediment samples collected for chemical analysis were submitted to CAS as per method specifications.

The data quality review process includes the following steps:

- Verify that sample numbers and analyses match those requested on the chain-of-custody form
- Review sample holding time
- Verify that required reporting limits have been achieved
- Verify the accuracy of the electronic data deliverable (EDD)
- Verify that matrix spikes (MS) and lab control samples were run at the proper frequency
- Verify that surrogate compound analyses have been performed and have met quality control criteria
- Verify that MS and matrix spike duplicate (MSD) recoveries were within control limits
- Verify that lab control sample (LCR) recoveries were within control limits
- Verify that lab duplicate or triplicate sample results relative percent differences (RPD) are within control limits
- Verify that laboratory blanks are free of contaminants at or below the method reporting limits (MRL).

All data were determined to be acceptable for use, with certain qualifiers defined in the Data Validation Report and associated Table 1 (Appendix D). The data quality review is summarized briefly below; summaries are by analytical group.

3.3.2.1 *Conventionals*

Grain size, total solids, and total organic carbon (TOC) analyses were all acceptable. All required holding times were met. All reporting limits were met. Control samples were run at the required frequency and were within control limits. Grain size samples were frozen first for composite samples, which is not recommended under PSEP guidelines, but due to the nature of the sediments (i.e. predominantly sand), this freezing and thawing is unlikely to affect particle size distribution.

3.3.2.2 *Metals*

All required holding times were met. Reporting limits were slightly elevated compared to those specified by CAS. This was considered acceptable. A method blank, MS/MSDs, and LCS were

run with each batch at the required frequency. No target analytes were detected in the method blanks above the MRL.

3.3.2.3 Organics

All required holding times were met. Reporting limits were slightly elevated for two samples – SDC-SS01-000007 and SDC-SS02-000013, in part due to dilutions. Laboratory quality control analysis frequencies were acceptable. Laboratory blank results were acceptable. Surrogate recoveries were within control limits for most samples. However, due to poor surrogate recoveries for SDC-SS03R2-002004 for the base/neutral fraction, all compounds within the base/neutral fraction for this sample are either UJ flagged or J flagged. LCS recoveries were acceptable, as were matrix spike and matrix spike duplicates and MS MSD RPDs.

3.3.2.3 Pesticides

All required holding times were met. Laboratory quality control analyses frequencies were acceptable. Reporting limits were slightly elevated. Laboratory blank results were acceptable after reanalyses. Surrogate, LCS, and MS, MSD recoveries were all acceptable. MS, MSD RPDs were acceptable. For sample SDC-SS01-000007 (Aldrin) and SDC-SS01-000007, SDC-SS02-000013, and SDC-SS04-000008 (DDE), the confirmation comparison between dual columns was outside of CAS control limits and therefore were flagged with J.

3.3.2.4 PCBs

All holding times were met. Laboratory quality control analysis frequencies were acceptable. Reporting limits were slightly elevated. All LCS and surrogate recoveries and most MS and MSD recoveries were within control limits. MS/MSD RPDs were within the laboratory-specified control limits. Sample confirmation criteria were met for most samples and analytes. However, SDC-SS02-000014 exceeded the sample confirmation criteria for Aroclor 1254, and the associated result was flagged with a J.

3.3.2.5 Organotins

Most holding times and holding requirements were met, and if exceedances occurred, these were considered acceptable. Reporting limits were slightly elevated for a few samples. With reanalyses, most laboratory blank results were acceptable. However, the surrogate recovery in the method blank was less than the control limit for several samples. These samples were not re-extracted because no analyte was detected, but associated values received a UJ flag. LCS, MS, and MSD recoveries were all acceptable. MS, MSD RPDs were acceptable.

3.3.2.6 PAHs (Screening Method)

All holding times and reporting limits were met for PAH screening. Surrogate, LCS, MS, and MSD recoveries were all acceptable. MS and MSD RPDs were slightly above the laboratory control limit.

3.4 COMPARISON TO RELEVANT CRITERIA

Analytical results from top composites (representative of material to be removed) and bottom composites (representative of the post-dredge surface) were compared to various sediment criteria, with comparison to DMEF criteria as the most relevant. PAH-screening results were not compared to criteria as these individual intervals were subsequently used to generate a bottom composite. Therefore, the bottom composite results are more representative of the post-dredge surface quality.

3.4.1 Dredge Material Evaluation Framework

Since this sediment characterization project is directed towards characterizing material for maintenance dredging, comparison to DMEF criteria is the most relevant. In general, there were very few DMEF screening level exceedances (six, total). They occurred only in surface composites; composites generated at depth considered representative of the post-dredge surface were largely devoid of detections and when detections occurred, they were many times below screening levels. Table 3.3 shows only those samples that exceed screening levels and the degree of exceedance (i.e. how many times the sample exceeded the SL). There were no DMEF bioaccumulation trigger exceedances. There was a summed DDT exceedance for SS01-000007, a surface composite located on the southern river side, but the degree of exceedance was slight (1.48). The majority of exceedances (four of six) occurred in SS02-000013, the surface composite of the more northern river core. There were very slight exceedances for indeno(1,2,3-cd)pyrene and benzo(g,h,i)perylene, two ubiquitous high molecular weight PAHs. Furthermore, there was a slight (1.46) screening level exceedance for total PCBs at this core. The most significant screening level exceedance for the entire sampling effort was summed DDTs in this sample (37 ug/Kg, 5.36 times the screening level). Notably, this core contained the thickest lens of overlying silty sand/sandy silt that appeared to be unique to these river cores.

SDC-SS06-000007, the surface composite of core SS06 located in Berth 3, also contained an exceedance for total PCBs (2.31 times the screening level value).

No exceedances occurred in cores SDC-SS03 through SDC-SS05. Importantly, even in cores with minor exceedances, no exceedances occurred at depth (i.e. lower composite) in the cores.

3.4.2 Freshwater Sediment Quality Values

In the absence of any Oregon freshwater sediment quality guidance, freshwater sediment quality values developed by MacDonald et al and Ingersoll et al have been used for comparison. MacDonald et al developed 28 Freshwater Sediment Quality Guidelines called "Consensus Based Freshwater Quality Guidelines", including a "Probable Effects Concentration" (PEC) above which adverse effects may occur (MacDonald et al 2000; Ingersoll et al 2000). Additionally, these values or multiplications of these values (i.e. 5X PEC) have been proposed for use as screening tools for Portland Harbor by the Lower Willamette Group (LWG 2002). These comparisons are provided only to illustrate the very high quality of the post-dredge surface (i.e. the bottom composites).

There were only three PEC value exceedances, all less than 1.4 times the PEC value, and all for PAHs occurring in the surface composite of core SDC-SS02 (sample SDC-SS02-000013). These exceedances were for naphthalene, phenanthrene, and pyrene. No exceedances occurred at depth. There were no exceedances of any 5X PEC "screening" values.

3.4.3 Portland Harbor Area-Wide "Baseline" Values

It is important to note that all exceedances are within the "baseline" or "background" Portland Harbor range of data developed by the Oregon Department of Environmental Quality (ODEQ). Table 3.5 shows several lines of evidence for this. For instance, ODEQ's apparent Portland Harbor Sediment baseline for total DDTs is 220 µg/Kg, and the maximum detected DDTs value during this project in core SDC-SS02 is 37 µg/Kg. The LWG's Phase 1 Work Plan cites a detection frequency for DDTs of 73 percent within the Portland Harbor Initial Study Area with maximum detects up to 84,909 µg/Kg, indicating a widespread occurrence of DDTs within the study area (LWG 2002). Subsurface sediment results developed by Weston do not tabulate total DDTs, but instead provide arithmetic means for 4,4'-DDD, 4,4'-DDE, and 4,4'-DDT range from 213 to 1762 µg/Kg. Therefore, these DDT exceedances in this March IT Slip sampling event are well within the general "background", and in fact at the low end, for Portland Harbor. Notably, DDT exceedances only occurred in the river berths, not within the slip. Also importantly, these exceedances were not PEC value exceedances, just DMEF screening level exceedances related to tiered testing for open water disposal. These exceedances may not relate to a genuine biological effect.

Total PCBs exceeded DMEF screening values at two cores, one on the river side at SDC-SS02 (190 µg/Kg J) and one within the slip at SDC-SS06 (300 µg/Kg). ODEQ's baseline value is 180 µg/Kg. The LWG notes a detection frequency of total PCBs at 45 percent within the initial study area. Weston subsurface data indicates an arithmetic mean of 3818.7 µg/Kg and a median value of 72 µg/Kg. Therefore, these detections should not be considered remarkable or as an indication of ongoing sources, but rather as potentially indicative of a general background. Importantly, these exceedances were not PEC value exceedances and therefore may not relate to a genuine biological effect.

3.4.4 DMEF Site Ranking

The Lower Columbia River Management Area DMEF guidance manual (USACE1998) provides a classification scheme for initial management area ranking. These initial rankings serve as one of the project variables factored into the development of sediment sampling and analyses plans. Due to both upland activities (i.e. the Burgard Yard) and the location of the site (within both an active shipping area and a Superfund site), the IT Slip and river berths could receive an initial Management Area Ranking definition/classification of "Moderate" or possibly, "High."

The DMEF guidance also defines heterogeneous sediments as those in which physical characteristics are dissimilar within the sampling depth. Characteristics of such sediments include obvious layering of sediments, lenses of dissimilar material, or other characteristics. Due to the stratigraphic appearance of cores collected, these sediments seem to be heterogeneous (Appendix A).

Based on analytical results gathered during these investigations, this project should receive a ranking of "Low Moderate", as there are six screening level exceedances but no exceedances are greater than the screening level plus maximum level divided by two.

4.0 Conclusions

This sampling and analyses project was conducted to characterize sediment quality for refinement of dredge design to ensure that the post-dredge sediment surface will be acceptable. The project was also undertaken to characterize dredge materials to be removed and the appropriateness of the DMEF site ranking.

Results indicate that the sediments are within the range of "background" or "baseline" Portland Harbor sediment contaminant concentrations. Only six DMEF screening level value exceedances occurred, with five out of six exceedances occurring within a thicker surface lens of silty material of likely depositional origin within the river berths. All exceedances are within the expected background levels of widely distributed contaminants found in Portland Harbor. The sediment analytical data also indicates that the predicted exposed post-dredge surface within each berth will be of high quality with zero to trace analyte detection. Based on the results of this investigation, the Management Area Ranking definition/classification for this project should be classified as "Low Moderate".

5.0 References

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SSI-IT SEDS

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Tables

Final

Table 2.1
Core Designations and Coordinates

Core Designation	Oregon State Plane North Zone NAD27	
	Y (Northing)	X (Easting)
SDC-SS01	715858	1416509
SDC-SS02	716566	1416243
SDC-SS03R	717170	1416183
SDC-SS04	717245	1416540
SDC-SS05	717228	1417008
SDC-SS06	717197	1417424

Table 2.2
Compounds Analyzed, Analysis Methods, and Target Reporting Limits

Parameter	Analysis Method	Reporting Limit ¹
<u>Conventionals</u>		
Grain Size	PSEP/ASTM D 422	NA
Total Solids (%)	EPA 160.3 M/PSEP	NA
Total Organic Carbon (%)	ASTM D 4129-82 M/ PSEP	0.05
<u>Metals (mg/kg)</u>		
Antimony	EPA 200.8	0.05
Arsenic	EPA 200.8	0.5
Cadmium	EPA 200.8	0.05
Copper	EPA 200.8	0.1
Lead	EPA 200.8	0.05
Mercury	EPA 7471 CVAA	0.02
Nickel	EPA 200.8	0.2
Silver	EPA 200.8	0.02
Zinc	EPA 200.8	0.5
<u>Organometallic compounds (µg/kg)</u>		
Tributyltin (sediment)	Krone	1
<u>Organics (µg/kg)</u>		
Total LPAH		
Naphthalene	EPA 8270C-low level	10
Acenaphthylene	EPA 8270C-low level	10
Acenaphthene	EPA 8270C-low level	10
Fluorene	EPA 8270C-low level	10
Phenanthrene	EPA 8270C-low level	10
Anthracene	EPA 8270C-low level	10
2-Methylnaphthalene	EPA 8270C-low level	10
<u>Total HPAH</u>		
Fluoranthene	EPA 8270C-low level	10

Table 2.2
Compounds Analyzed, Analysis Methods, and Target Reporting Limits

Parameter	Analysis Method	Reporting Limit ¹
Pyrene	EPA 8270C-low level	10
Benz(a)anthracene	EPA 8270C-low level	10
Chrysene	EPA 8270C-low level	10
Benzofluoranthenes (b+k)	EPA 8270C-low level	20
Benzo(a)pyrene	EPA 8270C-low level	10
Indeno(1,2,3-c,d)pyrene	EPA 8270C-low level	10
Dibenz(a,h)anthracene	EPA 8270C-low level	10
Benzo(g,h,i)perylene	EPA 8270C-low level	10
<u>Chlorinated hydrocarbons (µg/kg)</u>		
1,3-Dichlorobenzene	EPA 8270C-low level	10
1,4-Dichlorobenzene	EPA 8270C-low level	10
1,2-Dichlorobenzene	EPA 8270C-low level	10
1,2,4-Trichlorobenzene	EPA 8270C-low level	10
Hexachlorobenzene	EPA 8270C-low level	10
<u>Phthalates (µg/kg)</u>		
Dimethyl phthalate	EPA 8270C-low level	10
Diethyl phthalate	EPA 8270C-low level	10
Di-n-butyl phthalate	EPA 8270C-low level	10
Butyl benzyl phthalate	EPA 8270C-low level	10
Bis(2-ethylhexyl) phthalate	EPA 8270C-low level	200
Di-n-octyl phthalate	EPA 8270C-low level	10
<u>Phenols (µg/kg)</u>		
Phenol	EPA 8270C-low level	30
2-Methylphenol	EPA 8270C-low level	10
<u>Phenols (µg/kg) cont.</u>		
4-Methylphenol	EPA 8270C-low level	10
2,4-Dimethylphenol	EPA 8270C-low level	50

Table 2.2
Compounds Analyzed, Analysis Methods, and Target Reporting Limits

Parameter	Analysis Method	Reporting Limit ¹
Pentachlorophenol	EPA 8270C-low level	50
Misc. extractables (µg/kg)		
Benzyl alcohol	EPA 8270C-low level	10
Benzoic acid	EPA 8270C-low level	200
Dibenzofuran	EPA 8270C-low level	10
Hexachloroethane	EPA 8270C-low level	10
Hexachlorobutadiene	EPA 8270C-low level	10
N-Nitrosodiphenylamine	EPA 8270C-low level	10
Pesticides (µg/kg)		
Total DDT (4,4'-DDD, 4,4'-DDE, 4,4'-DDT)	--	3.0
4,4'-DDD	EPA 8081 A-low level	1.0
4,4'-DDE	EPA 8081 A-low level	1.0
4,4'-DDT	EPA 8081 A-low level	1.0
Aldrin	EPA 8081 A-low level	1.0
Alpha-Chlordane	EPA 8081 A-low level	1.0
Dieldrin	EPA 8081 A-low level	1.0
Heptachlor	EPA 8081 A-low level	1.0
Gamma-BHC (Lindane)	EPA 8081 A-low level	1.0
PCBs (µg/kg)		
Total PCBs ²	EPA 8082 A-low level	80
PAH screening (µg/kg)		
Total PAHs	GC/MS-SIM	90

Notes:

- 1 Reporting limits are for soil with 0% moisture content. The actual reporting limits for sediment samples can vary depending on the moisture content. Assuming 50% moisture content, the reporting limits will double for each analyte but still remain below the screening levels specified in the DMEF (USACE 1998). Deviations are noted in the Data Validation Report (see Appendix D).
- 2 Total PCBs is a sum of Aroclors 1016, 1221, 1232, 1242, 1248, 1254, and 1260.

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Antimony (total)	0.392	J	mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Arsenic (total)	2.72		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Cadmium (total)	0.48		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Copper (total)	27.4		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Lead (total)	25.6		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Nickel (total)	19.1		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Silver (total)	0.324		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	200.8	Zinc (total)	107		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	7471A	Mercury (total)	0.09		mg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	4,4'-DDD	5.5		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	4,4'-DDE	4.7	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	4,4'-DDT	5.2	UM	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	Aldrin	2.4	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	alpha-Chlordane	0.19	UM	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	DDTs (total-calc'd p,p')	10.2	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	Dieldrin	0.2	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	gamma-BHC	1.6	UM	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8081A	Heptachlor	0.29	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1016	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1221	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1232	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1242	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1248	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1254	89		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCB-1260	25		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8082	PCBs (total)	114		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	1,2,4-Trichlorobenzene	2.7	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	1,2-Dichlorobenzene	2.3	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	1,3-Dichlorobenzene	2.9	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	1,4-Dichlorobenzene	3.4	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	2,4-Dimethylphenol	9.8	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	2-Methylnaphthalene	100		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	2-Methylphenol	6.1	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	4-Methylphenol	84		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Acenaphthene	85		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Acenaphthylene	42		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Anthracene	95		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(a)anthracene	180		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(a)pyrene	260		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(b)fluoranthene	220		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(g,h,i)perylene	210		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(k)fluoranthene	170		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzo(b+k)fluoranthene	390		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzoic acid	170	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Benzyl alcohol	7.9	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	bis(2-ethylhexyl)phthalate	770	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Butyl benzyl phthalate	170		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Chrysene	230		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Dibenzo(a,h)anthracene	41		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Dibenzofuran	40		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Diethylphthalate	6.2	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Dimethyl phthalate	3.2	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Di-n-butyl phthalate	23		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Di-n-octyl phthalate	2.2	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Fluoranthene	350		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Fluorene	76		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Hexachlorobenzene	3.8	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Hexachlorobutadiene	2.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Hexachloroethane	3.9	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Indeno(1,2,3-cd)pyrene	200		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Naphthalene	270		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	N-Nitrosodiphenylamine	3.9	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Pentachlorophenol	16	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Phenanthrene	360		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Phenol	11	J	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	Pyrene	460		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	LPAH (Total)	1028		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	8270C	HPAH (Total)	2321		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	Krone	Butyltin	2		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	Krone	Dibutyltin	25		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	Krone	Tetrabutyltin	1.5	U	µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	Krone	Tributyltin	150		µg/kg
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Clay (percent)	11.1		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Coarse Sand	2.01		%

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Fine Sand	11.7		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Gravel (percent)	1.47		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Medium Sand	21.1		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Silt (percent)	39.7		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Very Fine Sand	13.1		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Very Coarse Sand	0.51		%
SDC-SS01-000007	3/12/2003 15:16	Sediment	PSEP	Total Organic Carbon (TOC)	1.59		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Antimony (total)	0.05	UJ	mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Arsenic (total)	1.9		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Cadmium (total)	0.05		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Copper (total)	13.2		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Lead (total)	2.63		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Nickel (total)	16.1		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Silver (total)	0.02	J	mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	200.8	Zinc (total)	36.6		mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	7471A	Mercury (total)	0.01	J	mg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	4,4'-DDD	0.11	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	4,4'-DDT	0.22	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	Aldrin	0.12	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	alpha-Chlordane	0.13	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	DDTs (total-calc'd p,p')	0.22	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	Dieldrin	0.15	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	gamma-BHC	0.22	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8081A	Heptachlor	0.21	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1016	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1221	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1232	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1242	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1248	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1254	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCB-1260	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8082	PCBs (total)	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	1,2,4-Trichlorobenzene	2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	1,2-Dichlorobenzene	1.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	1,3-Dichlorobenzene	2.1	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	1,4-Dichlorobenzene	2.5	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	2,4-Dimethylphenol	7.1	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	2-Methylnaphthalene	1.6	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	2-Methylphenol	4.4	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	4-Methylphenol	3.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Acenaphthene	1.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Acenaphthylene	1.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Anthracene	1.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(a)anthracene	1.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(a)pyrene	2.1	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(b)fluoranthene	3.2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(g,h,i)perylene	3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(k)fluoranthene	3.2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzo(b+k)fluoranthene	3.2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Benzyl alcohol	4.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	bis(2-ethylhexyl)phthalate	7.9	J	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Butyl benzyl phthalate	2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Chrysene	1.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Dibenzo(a,h)anthracene	2.9	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Dibenzofuran	1.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Diethylphthalate	4.5	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Dimethyl phthalate	2.3	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Di-n-butyl phthalate	3.4	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Di-n-octyl phthalate	1.6	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Fluoranthene	2.9	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Fluorene	2.2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Hexachlorobenzene	2.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Hexachlorobutadiene	1.8	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Hexachloroethane	2.9	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Indeno(1,2,3-cd)pyrene	2.5	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Naphthalene	1.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	N-Nitrosodiphenylamine	2.9	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Pentachlorophenol	11	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Phenanthrene	1.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Phenol	2.5	J	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	Pyrene	1.7	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	LPAH (Total)	2.2	U	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS01-007010C	3/12/2003 15:16	Sediment	8270C	HPAH (Total)	3.2	U	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	Krone	Butyltin	0.6	UJ	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	Krone	Dibutyltin	0.94	UJ	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	Krone	Tetrabutyltin	1.1	UJ	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	Krone	Tributyltin	0.46	UJ	µg/kg
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Clay (percent)	0.56		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Coarse Sand	10.8		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Fine Sand	23		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Gravel (percent)	0.1		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Medium Sand	63.1		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Silt (percent)	1.68		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Very Fine Sand	1.96		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Very Coarse Sand	0.3		%
SDC-SS01-007010C	3/12/2003 15:16	Sediment	PSEP	Total Organic Carbon (TOC)	0.12		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Antimony (total)	0.371	J	mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Arsenic (total)	3.18		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Cadmium (total)	0.456		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Copper (total)	26.6		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Lead (total)	23.5		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Nickel (total)	17		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Silver (total)	0.442		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	200.8	Zinc (total)	84.7		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	7471A	Mercury (total)	0.25		mg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	4,4'-DDD	20		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	4,4'-DDE	17	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	4,4'-DDT	6.3	UM	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	Aldrin	1.2	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	alpha-Chlordane	0.18	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	37	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	Dieldrin	0.19	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	gamma-BHC	1.5	UM	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8081A	Heptachlor	0.28	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1016	1.5	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1221	1.5	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1232	1.5	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1242	1.5	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1248	1.5	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1254	110	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCB-1260	80		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8082	PCBs (total)	190	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	1,2,4-Trichlorobenzene	26	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	1,2-Dichlorobenzene	23	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	1,3-Dichlorobenzene	28	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	1,4-Dichlorobenzene	33	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	2,4-Dimethylphenol	95	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	2-Methylnaphthalene	290		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	2-Methylphenol	59	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	4-Methylphenol	190		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Acenaphthene	350		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Acenaphthylene	130		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Anthracene	340		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(a)anthracene	560		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(a)pyrene	790		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(b)fluoranthene	510		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(g,h,i)perylene	740		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(k)fluoranthene	460		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzo(b+k)fluoranthene	970		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzoic acid	1700	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Benzyl alcohol	64	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	bis(2-ethylhexyl)phthalate	62	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Butyl benzyl phthalate	26	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Chrysene	710		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Dibenzo(a,h)anthracene	92	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Dibenzofuran	110		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Diethylphthalate	61	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Dimethyl phthalate	32	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Di-n-butyl phthalate	45	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Di-n-octyl phthalate	21	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Fluoranthene	1400		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Fluorene	290		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Hexachlorobenzene	37	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Hexachlorobutadiene	25	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Hexachloroethane	38	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Indeno(1,2,3-cd)pyrene	620		µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Naphthalene	740		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	N-Nitrosodiphenylamine	38	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Pentachlorophenol	150	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Phenanthrene	1400		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Phenol	33	U	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	Pyrene	2100		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	LPAAH (Total)	3540		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	8270C	HPAAH (Total)	7982	J	µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	Krone	Butyltin	0.82		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	Krone	Dibutyltin	2.3		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	Krone	Tetrabutyltin	1.4		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	Krone	Tributyltin	7.9		µg/kg
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Clay (percent)	17.1		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Coarse Sand	3.31		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Fine Sand	6.44		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Gravel (percent)	0.09		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Medium Sand	15.2		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Silt (percent)	47.3		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Very Coarse Sand	0.53		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Very Fine Sand	9.32		%
SDC-SS02-000013	3/12/2003 16:45	Sediment	PSEP	Total Organic Carbon (TOC)	2.06		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Antimony (total)	0.05	J	mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Arsenic (total)	2.5		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Cadmium (total)	0.06		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Copper (total)	13.1		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Lead (total)	2.96		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Nickel (total)	16.3		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Silver (total)	0.02	J	mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	200.8	Zinc (total)	37.5		mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	7471A	Mercury (total)	0.01	U	mg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	4,4'-DDD	0.1	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	4,4'-DDT	0.22	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	Aldrin	0.12	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	alpha-Chlordane	0.13	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	0.22	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	Dieldrin	0.14	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	gamma-BHC	0.22	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8081A	Heptachlor	0.21	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1016	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1221	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1232	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1242	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1248	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1254	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCB-1260	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8082	PCBs (total)	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	1,2,4-Trichlorobenzene	1.9	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	1,2-Dichlorobenzene	1.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	1,3-Dichlorobenzene	2.1	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	1,4-Dichlorobenzene	2.5	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	2,4-Dimethylphenol	7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	2-Methylnaphthalene	1.6	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	2-Methylphenol	4.4	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	4-Methylphenol	3.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Acenaphthene	1.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Acenaphthylene	1.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Anthracene	1.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(a)anthracene	2.4	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(a)pyrene	2.4	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(b)fluoranthene	3.2	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(g,h,i)perylene	3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(k)fluoranthene	3.2	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzo(b+k)fluoranthene	3.2	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Benzyl alcohol	4.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	bis(2-ethylhexyl)phthalate	5	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Butyl benzyl phthalate	1.9	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Chrysene	2.5	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Dibenzo(a,h)anthracene	2.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Dibenzofuran	1.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Diethylphthalate	4.5	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Dimethyl phthalate	2.3	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Di-n-butyl phthalate	3.3	U	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Di-n-octyl phthalate	1.6	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Fluoranthene	3.9	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Fluorene	2.2	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Hexachlorobenzene	2.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Hexachlorobutadiene	1.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Hexachloroethane	2.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Indeno(1,2,3-cd)pyrene	2.5	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Naphthalene	1.7	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	N-Nitrosodiphenylamine	2.8	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Pentachlorophenol	11	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Phenanthrene	2.4	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Phenol	2.5	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	Pyrene	5.6	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	LPAH (Total)	2.4	U	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	8270C	HPAH (Total)	16.8	J	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	Krone	Tetrabutyltin	1.1	UJ	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	Krone	Tributyltin	0.46	UJ	µg/kg
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Clay (percent)	0.71		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Coarse Sand	5.64		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Fine Sand	25.1		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Gravel (percent)	0.04		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Medium Sand	62		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Silt (percent)	2.96		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Very Coarse Sand	0.12		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Very Fine Sand	2.9		%
SDC-SS02-015017C	3/12/2003 16:45	Sediment	PSEP	Total Organic Carbon (TOC)	0.07		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Antimony (total)	0.05	J	mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Arsenic (total)	1.7		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Cadmium (total)	0.05	J	mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Copper (total)	12.8		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Lead (total)	2.52		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Nickel (total)	16.7		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Silver (total)	0.03		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	200.8	Zinc (total)	35.5		mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	7471A	Mercury (total)	0.01	U	mg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	4,4'-DDD	0.11	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 16:45	Sediment	8081A	4,4'-DDT	0.23	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	Aldrin	0.12	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	alpha-Chlordane	0.14	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	0.23	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	Dieldrin	0.15	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	gamma-BHC	0.63	J	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8081A	Heptachlor	0.24	UM	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1016	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1221	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1232	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1242	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1248	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1254	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCB-1260	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8082	PCBs (total)	2.4	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	1,2,4-Trichlorobenzene	2	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	1,2-Dichlorobenzene	1.7	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	1,3-Dichlorobenzene	2.1	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	1,4-Dichlorobenzene	2.5	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	2,4-Dimethylphenol	7.2	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	2-Methylnaphthalene	1.6	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	2-Methylphenol	4.5	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	4-Methylphenol	3.8	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Acenaphthene	1.4	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Acenaphthylene	1.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Anthracene	1.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(a)anthracene	1.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(a)pyrene	2.1	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(b)fluoranthene	3.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(g,h,i)perylene	3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(k)fluoranthene	3.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzo(b+k)fluoranthene	3.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Benzyl alcohol	4.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	bis(2-ethylhexyl)phthalate	5.4	J	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Butyl benzyl phthalate	2	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Chrysene	1.9	UJ	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Dibenzo(a,h)anthracene	2.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Dibenzofuran	1.7	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Diethylphthalate	4.6	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Dimethyl phthalate	2.4	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Di-n-butyl phthalate	3.4	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Di-n-octyl phthalate	1.6	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Fluoranthene	2.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Fluorene	2.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Hexachlorobenzene	2.8	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Hexachlorobutadiene	1.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Hexachloroethane	2.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Indeno(1,2,3-cd)pyrene	2.5	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Naphthalene	1.7	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	N-Nitrosodiphenylamine	2.9	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Pentachlorophenol	12	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Phenanthrene	1.7	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Phenol	2.5	U	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	Pyrene	1.7	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	LPAH (Total)	2.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	8270C	HPAH (Total)	3.3	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	Krone	Butyltin	0.62	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	Krone	Dibutyltin	0.95	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	Krone	Tetrabutyltin	1.1	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	Krone	Tributyltin	0.47	UJ	µg/kg
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Clay (percent)	0.41		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Coarse Sand	4.98		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Fine Sand	25		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Gravel (percent)	0.05		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Medium Sand	69.6		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Silt (percent)	0.71		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Very Coarse Sand	0.07		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Very Fine Sand	1.14		%
SDC-SS03R2-002004C	3/12/2003 12:45	Sediment	PSEP	Total Organic Carbon (TOC)	0.05		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Antimony (total)	0.262	J	mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Arsenic (total)	1.98		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Cadmium (total)	0.122		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Copper (total)	15.3		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Lead (total)	9.02		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Nickel (total)	16.3		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Silver (total)	0.123		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	200.8	Zinc (total)	56.9		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	7471A	Mercury (total)	0.06		mg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	4,4'-DDD	2.4		µg/kg
SDC-SS04-000008	3/12/2003 16:45	Sediment	8081A	4,4'-DDE	4.1	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	4,4'-DDT	3.4	UM	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	Aldrin	0.13	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	alpha-Chlordane	0.14	U	µg/kg
SDC-SS04-000008	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	6.5	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	Dieldrin	0.15	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	gamma-BHC	1.2	UM	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8081A	Heptachlor	0.22	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1016	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1221	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1232	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1242	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1248	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1254	69		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCB-1260	27		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8082	PCBs (total)	96		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	1,2,4-Trichlorobenzene	2.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	1,2-Dichlorobenzene	1.8	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	1,3-Dichlorobenzene	2.2	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	1,4-Dichlorobenzene	2.6	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	2,4-Dimethylphenol	7.4	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	2-Methylnaphthalene	3.5	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	2-Methylphenol	4.6	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	4-Methylphenol	5.3	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Acenaphthene	4.2	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Acenaphthylene	12		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Anthracene	15		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(a)anthracene	48		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(a)pyrene	72		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(b)fluoranthene	52		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(g,h,i)perylene	60		µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(k)fluoranthene	41		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzo(b+k)fluoranthene	93		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Benzy alcohol	5	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	bis(2-ethylhexyl)phthalate	18	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Butyl benzyl phthalate	2.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Chrysene	58		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Dibenzo(a,h)anthracene	9.8	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Dibenzofuran	1.8	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Diethylphthalate	4.7	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Dimethyl phthalate	2.5	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Di-n-butyl phthalate	3.5	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Di-n-octyl phthalate	1.7	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Fluoranthene	49		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Fluorene	2.7	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Hexachlorobenzene	2.9	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Hexachlorobutadiene	1.9	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Hexachloroethane	3	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Indeno(1,2,3-cd)pyrene	57		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Naphthalene	11		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	N-Nitrosodiphenylamine	3	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Pentachlorophenol	12	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Phenanthrene	45		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Phenol	6.2	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	Pyrene	97		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	HPAH (Total)	93.4	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	8270C	HPAH (Total)	543.8	J	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	Krone	Butyltin	0.63	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	Krone	Dibutyltin	2.4		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	Krone	Tetrabutyltin	1.1	U	µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	Krone	Tributyltin	11		µg/kg
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Clay (percent)	4.28		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Coarse Sand	6.08		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Fine Sand	18.6		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Gravel (percent)	0.46		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Medium Sand	54.9		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Silt (percent)	10.8		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Very Coarse Sand	0.19		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Very Fine Sand	4.09		%
SDC-SS04-000008	3/11/2003 14:33	Sediment	PSEP	Total Organic Carbon (TOC)	0.38		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Antimony (total)	0.328	J	mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Arsenic (total)	1.5		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Cadmium (total)	0.096		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Copper (total)	13.6		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Lead (total)	7.87		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Nickel (total)	15.6		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Silver (total)	0.091		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	200.8	Zinc (total)	51.1		mg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	7471A	Mercury (total)	0.04		mg/kg
SDC-SS05-0000012	3/12/2003 16:45	Sediment	8081A	4,4'-DDD	0.47	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	4,4'-DDE	1.1	UM	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	4,4'-DDT	4.1	UM	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	Aldrin	0.12	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	alpha-Chlordane	0.14	U	µg/kg
SDC-SS05-0000012	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	0.47	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	Dieldrin	0.15	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	gamma-BHC	0.23	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8081A	Heptachlor	0.22	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1016	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1221	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1232	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1242	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1248	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1254	71		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCB-1260	23		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8082	PCBs (total)	94		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	1,2,4-Trichlorobenzene	2	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	1,2-Dichlorobenzene	1.8	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	1,3-Dichlorobenzene	2.2	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	1,4-Dichlorobenzene	2.6	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	2,4-Dimethylphenol	7.4	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	2-Methylnaphthalene	5.4	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	2-Methylphenol	4.6	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	4-Methylphenol	5.1	J	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Acenaphthene	4.8	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Acenaphthylene	9.8	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Anthracene	18		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(a)anthracene	31		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(a)pyrene	50		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(b)fluoranthene	43		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(g,h,i)perylene	50		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(k)fluoranthene	30		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzo(b+k)fluoranthene	73		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Benzyl alcohol	5	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	bis(2-ethylhexyl)phthalate	24	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Butyl benzyl phthalate	7.5	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Chrysene	45		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Dibenz(a,h)anthracene	6.7	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Dibenzofuran	2.8	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Diethylphthalate	4.7	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Dimethyl phthalate	2.4	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Di-n-butyl phthalate	3.5	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Di-n-octyl phthalate	1.6	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Fluoranthene	35		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Fluorene	4.1	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Hexachlorobenzene	2.8	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Hexachlorobutadiene	1.9	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Hexachloroethane	3	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Indeno(1,2,3-cd)pyrene	43		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Naphthalene	22		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	N-Nitrosodiphenylamine	3	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Pentachlorophenol	12	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Phenanthrene	36		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Phenol	5.5	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	Pyrene	93		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	LPAAH (Total)	100.1	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	8270C	HPAAH (Total)	426.7	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	Krone	Butyltin	0.63	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	Krone	Dibutyltin	1.1	J	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	Krone	Tetrabutyltin	1.1	U	µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	Krone	Tributyltin	2.6		µg/kg
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Clay (percent)	2.98		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Coarse Sand	3.83		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Fine Sand	22.7		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Gravel (percent)	0.07		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Medium Sand	58.1		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Silt (percent)	8.86		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Very Coarse Sand	0.22		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Very Fine Sand	6.52		%
SDC-SS05-0000012	3/11/2003 17:00	Sediment	PSEP	Total Organic Carbon (TOC)	0.3		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Antimony (total)	0.06	J	mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Arsenic (total)	1.2		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Cadmium (total)	0.04	J	mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Copper (total)	11.8		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Lead (total)	2.28		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Nickel (total)	14		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Silver (total)	0.03		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	200.8	Zinc (total)	33		mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	7471A	Mercury (total)	0.01	U	mg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	4,4'-DDD	0.11	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS05-014016C	3/12/2003 16:45	Sediment	8081A	4,4'-DDT	0.22	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	Aldrin	0.12	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	alpha-Chlordane	0.13	U	µg/kg
SDC-SS05-014016C	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	0.22	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	Diieldrin	0.15	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	gamma-BHC	0.22	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8081A	Heptachlor	0.21	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1016	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1221	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1232	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1242	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1248	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1254	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCB-1260	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8082	PCBs (total)	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	1,2,4-Trichlorobenzene	2	U	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	1,2-Dichlorobenzene	1.7	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	1,3-Dichlorobenzene	2.1	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	1,4-Dichlorobenzene	2.5	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	2,4-Dimethylphenol	7.2	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	2-Methylnaphthalene	1.6	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	2-Methylphenol	4.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	4-Methylphenol	3.8	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Acenaphthene	1.3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Acenaphthylene	1.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Anthracene	1.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(a)anthracene	1.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(a)pyrene	2.1	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(b)fluoranthene	3.3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(g,h,i)perylene	3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(k)fluoranthene	3.3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzo(b+k)fluoranthene	3.3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Benzyl alcohol	4.8	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	bis(2-ethylhexyl)phthalate	9.9	J	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Butyl benzyl phthalate	2	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Chrysene	1.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Dibenzo(a,h)anthracene	2.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Dibenzofuran	1.7	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Diethylphthalate	4.6	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Dimethyl phthalate	2.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Di-n-butyl phthalate	3.4	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Di-n-octyl phthalate	1.6	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Fluoranthene	2.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Fluorene	2.2	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Hexachlorobenzene	2.8	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Hexachlorobutadiene	1.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Hexachloroethane	2.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Indeno(1,2,3-cd)pyrene	2.5	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Naphthalene	1.7	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	N-Nitrosodiphenylamine	2.9	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Pentachlorophenol	11	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Phenanthrene	1.7	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Phenol	2.5	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	Pyrene	1.7	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	LPAA (Total)	2.2	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	8270C	HPAA (Total)	3.3	U	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	Krone	Butyltin	0.61	UJ	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	Krone	Dibutyltin	0.95	UJ	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	Krone	Tetrabutyltin	1.1	UJ	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	Krone	Tributyltin	0.47	UJ	µg/kg
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Clay (percent)	0.4		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Coarse Sand	9.26		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Fine Sand	15.4		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Gravel (percent)	0		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Medium Sand	69.8		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Silt (percent)	1.96		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Very Coarse Sand	0.2		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Very Fine Sand	1.97		%
SDC-SS05-014016C	3/11/2003 17:00	Sediment	PSEP	Total Organic Carbon (TOC)	0.04	J	%
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Antimony (total)	0.34	J	mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Arsenic (total)	2.98		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Cadmium (total)	0.349		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Copper (total)	29.3		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Lead (total)	30.5		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Nickel (total)	18.5		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Silver (total)	0.238		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	200.8	Zinc (total)	91.5		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	7471A	Mercury (total)	0.12		mg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	4,4'-DDD	0.5	J	µg/kg
SDC-SS06-000007	3/12/2003 16:45	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	4,4'-DDT	2.6		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	Aldrin	0.61	UM	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	alpha-Chlordane	0.36	J	µg/kg
SDC-SS06-000007	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	3.1	J	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	Dieldrin	0.18	UM	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	gamma-BHC	1.2	UM	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8081A	Heptachlor	0.22	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1016	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1221	1.4	U	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1232	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1242	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1248	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1254	300		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCB-1260	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8082	PCBs (total)	300		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	1,2,4-Trichlorobenzene	2.6	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	1,2-Dichlorobenzene	2.2	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	1,3-Dichlorobenzene	2.7	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	1,4-Dichlorobenzene	3.2	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	2,4-Dimethylphenol	9.3	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	2-Methylnaphthalene	11		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	2-Methylphenol	5.7	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	4-Methylphenol	13		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Acenaphthene	22		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Acenaphthylene	25		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Anthracene	54		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(a)anthracene	150		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(a)pyrene	210		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(b)fluoranthene	270		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(g,h,i)perylene	200		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(k)fluoranthene	120		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzo(b+k)fluoranthene	390		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzoic acid	170	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Benzyl alcohol	6.2	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	bis(2-ethylhexyl)phthalate	250		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Butyl benzyl phthalate	28		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Chrysene	220		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Dibenzo(a,h)anthracene	61		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Dibenzofuran	9.2	J	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Diethylphthalate	5.9	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Dimethyl phthalate	3.1	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Di-n-butyl phthalate	7.8	J	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Di-n-octyl phthalate	2.1	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Fluoranthene	200		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Fluorene	19		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Hexachlorobenzene	3.6	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Hexachlorobutadiene	2.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Hexachloroethane	3.7	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Indeno(1,2,3-cd)pyrene	200		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Naphthalene	30		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	N-Nitrosodiphenylamine	3.7	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Pentachlorophenol	15	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Phenanthrene	110		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Phenol	10	J	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	Pyrene	290		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	LPAA (Total)	271		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	8270C	HPAA (Total)	1921		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	Krone	Butyltin	5		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	Krone	Dibutyltin	24		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	Krone	Tetrabutyltin	1.4	U	µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	Krone	Tributyltin	67		µg/kg
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Clay (percent)	14.5		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Coarse Sand	0.81		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Fine Sand	11.4		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Gravel (percent)	0.05		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Medium Sand	11		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Silt (percent)	47.6		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Very Coarse Sand	0.18		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Very Fine Sand	13.3		%
SDC-SS06-000007	3/13/2003 15:05	Sediment	PSEP	Total Organic Carbon (TOC)	1.21		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Antimony (total)	0.05	J	mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Arsenic (total)	1.1		mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Cadmium (total)	0.05	J	mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Copper (total)	12.2		mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Lead (total)	2.47		mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Nickel (total)	15		mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Silver (total)	0.02	J	mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	200.8	Zinc (total)	33.8		mg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	7471A	Mercury (total)	0.01	J	mg/kg
SDC-SS06-008010C	3/12/2003 16:45	Sediment	8081A	4,4'-DDD	0.11	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	4,4'-DDE	0.13	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	4,4'-DDT	0.22	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	Aldrin	0.12	U	µg/kg

Table 3.1
Results of Conventional and Chemical Analyses

Sample ID	Collection Date	Matrix	Analysis	Analyte	Conc	Interpretive Qualifier	Unit
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	alpha-Chlordane	0.13	U	µg/kg
SDC-SS06-008010C	3/12/2003 16:45	Sediment	8081A	DDTs (total-calc'd p,p')	0.22	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	Dieldrin	0.14	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	gamma-BHC	0.22	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8081A	Heptachlor	0.21	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1016	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1221	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1232	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1242	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1248	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1254	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCB-1260	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8082	PCBs (total)	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	1,2,4-Trichlorobenzene	2	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	1,2-Dichlorobenzene	1.7	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	1,3-Dichlorobenzene	2.1	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	1,4-Dichlorobenzene	2.5	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	2,4-Dimethylphenol	7	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	2-Methylnaphthalene	1.6	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	2-Methylphenol	4.4	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	4-Methylphenol	3.7	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Acenaphthene	1.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Acenaphthylene	1.8	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Anthracene	3	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(a)anthracene	11		µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(a)pyrene	6.6	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(b)fluoranthene	9.2	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(g,h,i)perylene	6.3	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(k)fluoranthene	9.2	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzo(b+k)fluoranthene	18.4	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzoic acid	130	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Benzyl alcohol	4.7	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	bis(2-ethylhexyl)phthalate	24	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Butyl benzyl phthalate	2	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Chrysene	12		µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Dibenz(a,h)anthracene	2.8	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Dibenzofuran	2.1	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Diethylphthalate	4.5	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Dimethyl phthalate	2.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Di-n-butyl phthalate	3.3	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Di-n-octyl phthalate	1.6	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Fluoranthene	31		µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Fluorene	2.2	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Hexachlorobenzene	2.7	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Hexachlorobutadiene	1.8	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Hexachloroethane	2.8	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Indeno(1,2,3-cd)pyrene	6.7	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Naphthalene	2.4	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	N-Nitrosodiphenylamine	2.8	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Pentachlorophenol	11	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Phenanthrene	30		µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Phenol	2.5	U	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	Pyrene	20		µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	LPAH (Total)	35.4	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	8270C	HPAH (Total)	112	J	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	Krone	Butyltin	0.6	UJ	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	Krone	Dibutyltin	0.93	UJ	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	Krone	Tetrabutyltin	1.1	UJ	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	Krone	Tributyltin	0.46	UJ	µg/kg
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Clay (percent)	0.6		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Coarse Sand	12.7		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Fine Sand	13.6		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Gravel (percent)	0.01		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Medium Sand	69.4		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Silt (percent)	2.42		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Very Coarse Sand	0.12		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Very Fine Sand	1.59		%
SDC-SS06-008010C	3/13/2003 15:05	Sediment	PSEP	Total Organic Carbon (TOC)	0.1		%

Notes:

In the case of non-detects, the method detection limit is reported.

LPAH is a sum of naphthalene, acenaphthylene, acenaphthene, fluorene, phenanthrene, anthracene and 2-methylnaphthalene

HPAH is a sum of fluoranthene, pyrene, benzo(a)anthracene, chrysene, benzo(b+k)fluoranthene, benzo(a)pyrene,

indeno(1,2,3-c,d)pyrene, dibenz(a)anthracene and benzo(g,h,i)perylene

Table 3.2
PAH Screening Results

SampleID	Collection Date	Matrix	Analysis	Analyte	Conc.	Interpretive Qualifier	Unit Name
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Acenaphthylene	0.21	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Anthracene	0.25	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Benzo(a)anthracene	0.17	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Benzo(a)pyrene	19.1	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.31	J	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.24	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Dibenzofuran	0.27	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Fluoranthene	0.23	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Fluorene	0.23	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.2	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Naphthalene	0.28	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Phenanthrene	0.2	U	µg/kg
SDC-SS01-007008	3/12/2003 15:16	Sediment	8270C SIM	Pyrene	0.15	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Acenaphthylene	0.21	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Anthracene	0.25	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Benzo(a)anthracene	0.17	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Benzo(a)pyrene	0.19	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.14	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.24	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Dibenzofuran	0.27	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Fluoranthene	0.23	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Fluorene	0.23	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.2	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Naphthalene	0.28	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Phenanthrene	0.2	U	µg/kg
SDC-SS01-010011	3/12/2003 15:16	Sediment	8270C SIM	Pyrene	0.15	U	µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	2-Methylnaphthalene	38		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Acenaphthene	35		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Acenaphthylene	37		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Anthracene	85		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Benzo(a)anthracene	230		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Benzo(a)pyrene	420		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Benzo(b)fluoranthene	260		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Benzo(g,h,i)perylene	370		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Benzo(k)fluoranthene	220		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Chrysene	300		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Dibenzo(a,h)anthracene	26		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Dibenzofuran	13		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Fluoranthene	660		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Fluorene	37		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	350		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Naphthalene	180		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Phenanthrene	380		µg/kg
SDC-SS02-013014	3/12/2003 16:45	Sediment	8270C SIM	Pyrene	950		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	2-Methylnaphthalene	0.65	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Acenaphthene	0.33	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Acenaphthylene	1	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Anthracene	3.6	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Benzo(a)anthracene	11		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Benzo(a)pyrene	12		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Benzo(b)fluoranthene	7.9		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Benzo(g,h,i)perylene	8.2		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Benzo(k)fluoranthene	8.6		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Chrysene	13		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.98	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Dibenzofuran	0.32	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Fluoranthene	19		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Fluorene	0.76	J	µg/kg

Table 3.2
PAH Screening Results

SampleID	Collection Date	Matrix	Analysis	Analyte	Conc.	Interpretive Qualifier	Unit Name
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	7.2		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Naphthalene	5	J	µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Phenanthrene	9.7		µg/kg
SDC-SS02-016017	3/12/2003 16:45	Sediment	8270C SIM	Pyrene	26		µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	2-Methylnaphthalene	0.27	U	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Acenaphthene	0.27	U	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Acenaphthylene	0.21	U	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Anthracene	0.39	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Benzo(a)anthracene	1.3	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Benzo(a)pyrene	1.4	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Benzo(b)fluoranthene	1.3	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Benzo(g,h,i)perylene	1.7	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Benzo(k)fluoranthene	1.3	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Chrysene	1.9	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.37	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Dibenzofuran	0.26	U	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Fluoranthene	2.3	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Fluorene	0.22	U	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	1.6	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Naphthalene	0.43	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Phenanthrene	1.1	J	µg/kg
SDC-SS03R2-001002	3/12/2003 12:45	Sediment	8270C SIM	Pyrene	2.9	J	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Acenaphthylene	0.22	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Anthracene	0.26	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Benzo(a)anthracene	0.18	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Benzo(a)pyrene	0.19	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.74	J	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.49	J	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Dibenzofuran	0.27	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Fluoranthene	0.23	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Fluorene	0.23	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.69	J	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Naphthalene	0.28	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Phenanthrene	0.2	U	µg/kg
SDC-SS03R2-005006	3/12/2003 12:45	Sediment	8270C SIM	Pyrene	0.15	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Acenaphthylene	0.22	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Anthracene	0.26	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Benzo(a)anthracene	0.18	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Benzo(a)pyrene	0.19	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.14	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.24	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Dibenzofuran	0.27	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Fluoranthene	0.23	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Fluorene	0.23	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.2	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Naphthalene	0.28	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Phenanthrene	0.2	U	µg/kg
SDC-SS05-012013	3/11/2003 17:00	Sediment	8270C SIM	Pyrene	0.15	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Acenaphthylene	0.21	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Anthracene	0.25	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Benzo(a)anthracene	0.17	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Benzo(a)pyrene	0.19	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.78	J	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg

Table 3.2
PAH Screening Results

SampleID	Collection Date	Matrix	Analysis	Analyte	Conc.	Interpretive Qualifier	Unit Name
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.35	J	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Dibenzofuran	0.26	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Fluoranthene	0.22	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Fluorene	0.22	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.8	J	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Naphthalene	0.28	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Phenanthrene	0.2	U	µg/kg
SDC-SS05-015016	3/11/2003 17:00	Sediment	8270C SIM	Pyrene	0.15	U	µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	2-Methylnaphthalene	7.1		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Acenaphthene	7.5		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Acenaphthylene	11		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Anthracene	21		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Benzo(a)anthracene	120		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Benzo(a)pyrene	220		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Benzo(b)fluoranthene	160		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Benzo(g,h,i)perylene	180		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Benzo(k)fluoranthene	130		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Chrysene	170		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Dibenzo(a,h)anthracene	22		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Dibenzofuran	3.2	J	µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Fluoranthene	230		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Fluorene	6.7		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	180		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Naphthalene	19		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Phenanthrene	90		µg/kg
SDC-SS06-007008	3/13/2003 15:05	Sediment	8270C SIM	Pyrene	360		µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	2-Methylnaphthalene	0.28	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Acenaphthene	0.28	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Acenaphthylene	0.22	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Anthracene	0.25	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Benzo(a)anthracene	0.18	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Benzo(a)pyrene	0.19	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Benzo(b)fluoranthene	0.19	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Benzo(g,h,i)perylene	0.22	J	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Benzo(k)fluoranthene	0.2	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Chrysene	0.2	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Dibenzo(a,h)anthracene	0.24	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Dibenzofuran	0.27	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Fluoranthene	0.23	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Fluorene	0.23	U	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Indeno(1,2,3-cd)pyrene	0.21	J	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Naphthalene	0.3	J	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Phenanthrene	0.3	J	µg/kg
SDC-SS06-010011	3/13/2003 15:05	Sediment	8270C SIM	Pyrene	0.22	J	µg/kg

Table 3.3
Comparison to Dredge Material Evaluation Framework Criteria

Sample ID	Analyte	Conc.	Interpretive Qualifier	Unit Name	Ratio of Exceedance	
					DMEF BT	DMEF SL
SDC-SS01-000007	DDTs (total-calc'd p,p')	10.2	J	µg/kg		1.48
SDC-SS02-000013	Benzo(g,h,i)perylene	740		µg/kg		1.1
SDC-SS02-000013	DDTs (total-calc'd p,p')	37	J	µg/kg		5.36
SDC-SS02-000013	Indeno(1,2,3-cd)pyrene	620		µg/kg		1.03
SDC-SS02-000013	PCBs (total)	190	J	µg/kg		1.46
SDC-SS06-000007	PCBs (total)	300		µg/kg		2.31

Note:

Only exceedances of criteria are shown, i.e., when ratio of exceedance is greater than one.

Table 3.4
Comparison to Freshwater Sediment Quality Values

Sample ID	Analyte	Conc.	Interpretive Qualifier	Unit Name	Ratio of Exceedance
					Ingersoll PEC
SDC-SS02-000013	Naphthalene	740		µg/kg	1.32
SDC-SS02-000013	Phenanthrene	1400		µg/kg	1.2
SDC-SS02-000013	Pyrene	2100		µg/kg	1.38

Notes:

PEC values from Ingersoll et al 2000 and MacDonald et al 2000.

Only exceedances of criteria are shown, i.e., when ratio of exceedance is greater than one.

Table 3.5
Portland Harbor "Baseline" Values

Parameter	Apparent Portland Harbor Sediment Baseline Maximum Value	Sediment Concentrations From the Initial Study Area (LWG 2002)			Subsurface Sediment Concentrations in Portland Harbor (Weston 1997)	
		Detection Frequency	Minimum	Maximum	Arithmetic Mean	Median Value
Conventionals						
Total Organic Carbon (%)	2				2.0	1.8
Metals (mg/kg)						
Antimony	<5	35.7	0.02	13	3.2	2.5
Arsenic	<5	61.0	0.001	140	3.5	2.5
Cadmium	0.6	92.6	0.05	6.6	0.8	0.6
Copper	60	100	0.002	2200	85.9	53.6
Lead	30	95.8	0.01	1160	78.2	28.0
Mercury	0.1	88.6	0.01	2.1	0.18	0.12
Nickel	32	100	0.01	594	31.9	31.0
Silver	1.4	87.2	0.0002	3.4	1.3	1.3
Zinc	118	100	0.005	2700	205.8	157.0
Organometallic compounds (µg/kg)						
Tributyltin	300 ¹	89.8 ²	1 ²	42900 ²	1311.8 ²	84.6 ²
Organics (µg/kg)						
Total LPAH ³	700	88.0	1.7	4299000	8224.729	1451.0
Naphthalene		53.2	0.2	1900000	443.8	130.0
Acenaphthylene		28	8800	9000	87.4	31.0
Acenaphthene		58.5	0.4	580000	994.97	220.0
Fluorene		58.9	0.5	260000	804.5	160.0
Phenanthrene		88.2	0.4	1300000	5156.6	820.0
Anthracene		64.2	0.8	250000	809.6	160.0

Table 3.5
Portland Harbor "Baseline" Values

Parameter	Apparent Portland Harbor Sediment Baseline Maximum Value	Sediment Concentrations From the Initial Study Area (LWG 2002)			Subsurface Sediment Concentrations in Portland Harbor (Weston 1997)	
		Detection Frequency	Minimum	Maximum	Arithmetic Mean	Median Value
2-Methylnaphthalene	150	42.5	1	44000	300.4	79.0
Total HPAH ⁴	2400	95.0	2	1893000	19623.7	3187.0
Fluoranthene		94.7	0.7	480000	4307.0	1000.0
Pyrene		94.6	0.1	670000	5033.97	1000.0
Benz(a)anthracene		87.8	3	120000	1318.0	390.0
Chrysene		91.9	3	160000	1755.4	455.0
Benzofluoranthenes (b+k)		92.9	4	157000	2561.1	455.0
Benzo(a)pyrene		87.6	0.5	130000	1711.9	380.0
Indeno(1,2,3-c,d)pyrene		81.5	1	110000	1226.6	220.0
Dibenz(a,h)anthracene		48.5	0.7	25000	348.0	53.0
Benzo(g,h,i)perylene		80.8	0.6	6.3	1465.9	260.0
Chlorinated hydrocarbons (µg/kg)						
1,3-Dichlorobenzene		0.82	10	31	28.7	10.0
1,4-Dichlorobenzene		0.82	18	230	28.7	10.0
1,2-Dichlorobenzene		0.82	11	22	28.7	10.0
1,2,4-Trichlorobenzene		2.13	10	530	28.7	10.0
Hexachlorobenzene		2.26	19	14000	68.6	10.0
Phthalates (µg/kg)						
Dimethyl phthalate	<20	5.82	3.1	171	30.0	10.0
Diethyl phthalate		1.27	15.6	26.5	28.7	10.0
Di-n-butyl phthalate	<20	26.4	4.4	1500	32.8	10.0
Butyl benzyl phthalate	<20	31.1	3.4	3000	33.6	10.0

Table 3.5
Portland Harbor "Baseline" Values

Parameter	Apparent Portland Harbor Sediment Baseline Maximum Value	Sediment Concentrations From the Initial Study Area (LWG 2002)			Subsurface Sediment Concentrations in Portland Harbor (Weston 1997)	
		Detection Frequency	Minimum	Maximum	Arithmetic Mean	Median Value
Bis(2-ethylhexyl) phthalate	390	66.8	11	38000	379.3	210.0
Di-n-octyl phthalate	<20	15.9	11	10100	28.7	10.0
Phenols ($\mu\text{g/kg}$)						
Phenol	<20	4.39	5.1	300	39.1	10.0
2-Methylphenol		0.52	17	51	28.7	10.0
4-Methylphenol	680	46.6	20	1400	151.3	120.0
2,4-Dimethylphenol		0.775	31	6000	28.7	10.0
Pentachlorophenol	Detect	3.11	9.4	680	137.6	49.0
Misc. extractables ($\mu\text{g/kg}$)						
Benzyl alcohol	<20	2.90	5.5	15	28.6	10.0
Benzoic acid	<200	6.60	8.7	2600	534.2	365.0
Dibenzofuran	100	43.9	2	13900	291.2	59.0
Hexachloroethane		4.03	31	20000	569.8	10.0
Hexachlorobutadiene		2.17	19	34000	946.9	10.0
N-Nitrosodiphenylamine					28.7	10.0
Pesticides ($\mu\text{g/kg}$)						
Total DDT (4,4'-DDD, 4,4'-DDE, 4,4'-DDT)	220	72.8	1.2	84909		
4,4'-DDD		62.5	0.4	29000	1762.2	7.8
4,4'-DDE		50.3	0.7	1840	213.0	2.8
4,4'-DDT		56.5	0.2	81000	1267.6	14.5
Aldrin		6.56	0.2	60	107.1	0.5

Table 3.5
Portland Harbor "Baseline" Values

Parameter	Apparent Portland Harbor Sediment Baseline Maximum Value	Sediment Concentrations From the Initial Study Area (LWG 2002)			Subsurface Sediment Concentrations in Portland Harbor (Weston 1997)	
		Detection Frequency	Minimum	Maximum	Arithmetic Mean	Median Value
Alpha-Chlordane					107.1	0.5
Dieldrin		3.83	0.4	10	211.4	1.0
Heptachlor		0.55	6	6	107.1	0.5
Gamma-BHC (Lindane)					107.1	0.5
Total PCBs	<180	45.0	3	2500	3818.7	72.0

Notes:

- 1 This value is for total organotins, a sum of tetra-n-butyltin, tri-n-butyltin, di-n-butyltin and n-butyltin.
- 2 These values are for tri-n-butyltin ion.
- 3 Compounds that are included in the sum of LPAH may vary among the different sources.
- 4 Compounds that are included in the sum of HPAH may vary among the different sources.

SSI-IT SEDS

**International Terminal
Sediment Data Report**

Figures

Final

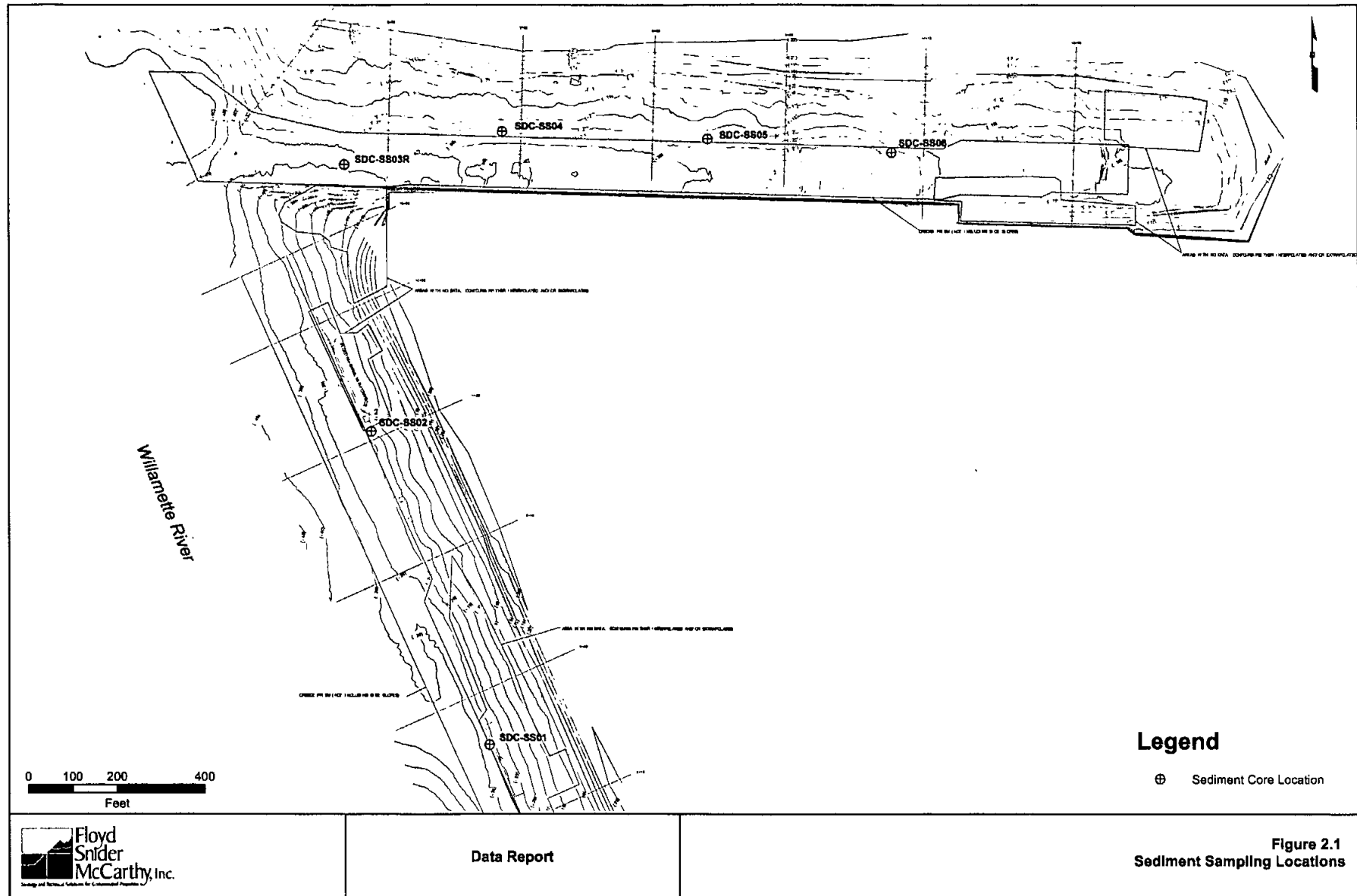
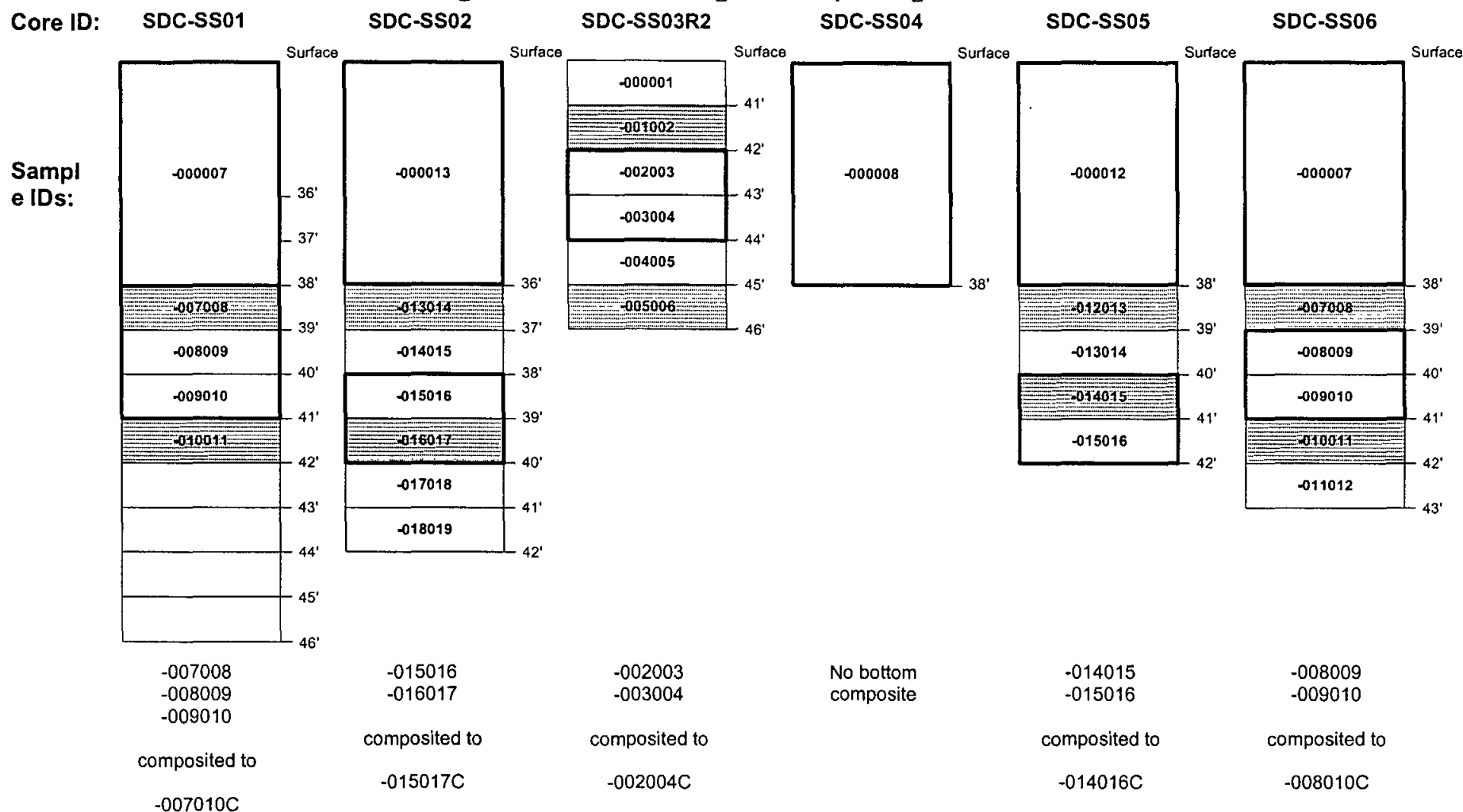


Figure 2.2. PAH Screening and Compositing Scheme



SSI-IT SEDS

**International Terminal
Sediment Data Report**

**Appendix A
Bore Logs**

Final

Project: International Terminals (IT) Slip

Station: SS-01

Mudline elevation: -31.1 ft CRD

Maximum depth of retained sediment: 12.0 ft
Percent recovery (on-deck): 70%

Core collection Laboratory processing
Date: 3/12/03 3/12/03
Time: 13:40 15:16

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

Depth below mudline (ft.)	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0	olive-gray, wet, (soft), silty Clay or clayey Silt	CL/ML			
2					
4	olive-gray, damp, (soft to loose), fine sandy, Silt to silty, fine Sand	SM/ML	0 to 7	SDC-SS01-000007	
6					
8	dark-gray, damp, (dense), trace silt, fine Sand	SP	7 to 8	SDC-SS01-007008	
			8 to 9	SDC-SS01-008009	
	decaying wood		9 to 10	SDC-SS01-009010	
10	dark-gray, damp, (dense), trace silt, fine Sand	SP	10 to 11	SDC-SS01-010011	
			11 to 12	SDC-SS01-011012	
12					
	Sediment lost				
14	End of Core	End of core	End of core	End of core	End of core
16					

Project: International Terminals (IT) Slip

Station: SS-02

Mudline elevation: -23.4 ft CRD

Maximum depth of retained sediment: 20.8 ft

Percent recovery (on-deck): 65%

Core collection Date: 3/12/03
Time: 14:54

Laboratory processing Date: 3/12/03
Time: 16:45

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0					
5	olive-gray, damp to wet, (soft to loose), very silty, Sand to fine sandy, Silt; some wood debris < 1%; faint petroleum odor ?	SM/ML	0 to 13	SDC-SS02-000013	
10					
	dark-gray, damp, (dense), trace silt, fine Sand	SP	13 to 14	SDC-SS02-013014	
			14 to 15	SDC-SS02-014015	
	olive-gray to dark gray, damp to moist, (soft), fine sandy, Silt.	ML	15 to 16	SDC-SS02-015016	
15					
	dark gray, damp, (dense), trace silt, fine Sand	SP	16 to 17	SDC-SS02-016017	
			17 to 18	SDC-SS02-017018	
			18 to 19	SDC-SS02-018019	
	Sediment lost				
20	End of Core	End of core	End of core	End of core	End of core
25					

Project: International Terminals (IT) Slip

Station: SS-03R2

Mudline elevation: -40.4 ft CRD

Maximum depth of retained sediment: 7.0 ft

Percent recovery (on-deck): 54%

Core collection Date: 3/12/03
Laboratory processing Date: 3/12/03
Time: 10:37 12:45

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

Depth below mudline (ft.)	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0	dark-gray, (soft), damp to wet, fine sandy Silt; faint petroleum odor ?	ML	0 to 1	SDC-SS03R2-000001	
			1 to 2	SDC-SS03R2-001002	
2			2 to 3	SDC-SS03R2-002003	
			3 to 4	SDC-SS03R2-003004	
4	dark-gray, (dense), damp to moist, trace silt, fine Sand	SP	4 to 5	SDC-SS03R2-004005	
			5 to 6	SDC-SS03R2-005006	
6					
8					
	Sediment lost				
10					
	End of Core	End of core	End of core	End of core	End of core
12					
14					

Project: International Terminals (IT) Slip

Station: SS-04

Mudline elevation: -29.5 ft CRD

Maximum depth of retained sediment: 8.0 ft

Percent recovery (on-deck): 55%

Core collection
Date: 3/11/03
Time: 12:37

Laboratory processing
3/11/03
14:21

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

Depth below mudline (ft.)	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0					
2	damp, (dense), dark-gray, trace silt, fine Sand; 2 cm long wood fragments < 1%	SP			
4			0 to 8	SDC-SS04-000008	
6	wet, (soft), dark-gray, fine sandy Silt to silty, fine Sand	SM/ML			
8	damp, (dense), dark-gray, trace silt, fine Sand; 2 cm long wood fragments, < 1%	SP			
10	Sediment lost				
12	End of Core	End of core	End of core	End of core	End of core

Project: International Terminals (IT) Slip

Station: SS-05

Mudline elevation: -26.5 ft CRD

Maximum depth of retained sediment: 16.9 ft

Percent recovery (on-deck): 65%

Core collection
Date: 3/11/03
Time: 14:33

Laboratory processing
3/11/03
17:00

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

Depth below mudline (ft.)	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0					
2	dark-gray, (dense), damp, trace silt, fine Sand.	SP			
4					
	dark-gray, (soft), wet, fine sandy, Silt; large chunk of wood, fist size	ML			
6			0 to 12	SDC-SS05-000012	
8					
10					
	dark-gray, (dense), damp, trace silt, fine Sand	SP			
12			12 to 13	SDC-SS05-012013	
			13 to 14	SDC-SS05-013014	
14			14 to 15	SDC-SS05-014015	
			15 to 16	SDC-SS05-015016	
16					
	End of Core	End of core	End of core	End of core	End of core
18					

Project: International Terminals (IT) Slip

Station: SS-06

Mudline elevation: -30.6 ft CRD

Maximum depth of retained sediment: 12.7 ft

Percent recovery (on-deck): 82%

Core collection
Date: 3/13/03
Time: 13:29

Laboratory processing
Date: 3/13/03
Time: 15:05

Field Log: Tom Cammarata
Summary Log: Rob Gilmour

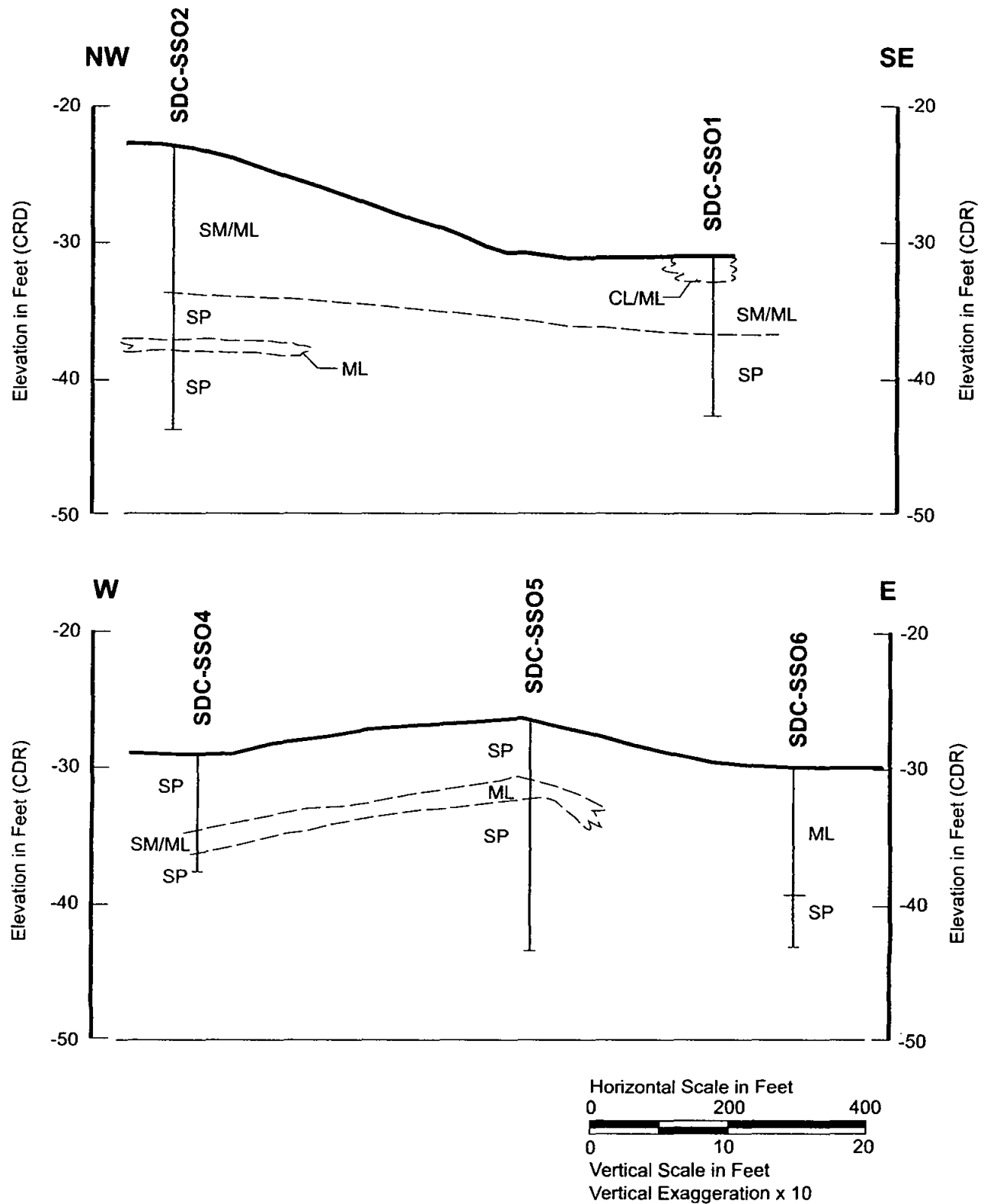
Depth below mudline (ft.)	Visual Description of Sediment	Summary Interpretation	Segment	Primary Sample ID	Secondary Sample ID
0					
2					
4	dark-gray to olive-gray, (soft), damp to wet, slightly fine sandy, Silt; shell fragments @ 7 ft below mudline; faint to mild petroleum odor	ML	0 to 7	SDC-SS06-000007	
6					
8	dark-gray to olive-gray, (soft to stiff), fine sandy, Silt	ML	7 to 8	SDC-SS06-007008	
			8 to 9	SDC-SS06-008009	
			9 to 10	SDC-SS06-009010	
10	dark-gray, (dense), damp, fine Sand	SP	10 to 11	SDC-SS06-010011	
			11 to 12	SDC-SS06-011012	
12					
	Sediment lost				
	End of Core	End of core	End of core	End of core	End of core
14					
16					

SSI-IT SEDS

**International Terminal
Sediment Data Report**

**Appendix B
Cross-Sections**

Final



core/floydandsnider/IT-Slip/Section1



International Terminal Slip
Portland, Oregon

Figure 1

SSI-IT SEDS

**International Terminal
Sediment Data Report**

**Appendix C
Chain of Custody Forms**

Final



CHAIN OF CUSTODY

Sediment and Tissue Chemistry

1317 South 13th Ave. • Kelso, WA 98626 • (360) 577-7222 • FAX (360) 636-1068

SR#:

PAGE 2 OF 3 COC #

PROJECT NAME <u>IT-SCIP</u>	
PROJECT NUMBER <u>SCI-ITSEDS.T5</u>	
PROJECT MANAGER <u>Alison Gerselbrecht</u>	
COMPANY/ADDRESS <u>1111 South 13th Ave. Kelso, WA 98626</u>	
PHONE # <u>360-292-2070</u>	FAX # <u>360-632-7867</u>
SAMPLER'S SIGNATURE _____	

SAMPLE I.D.	DATE	TIME	LAB I.D.	MATRIX	NUMBER OF CONTAINERS	TOC	Grain Size	Sulfide	AVS	Ammonia	Metals	Pesticides	PCBs	Semivolatiles	Organotins	Volatiles	Dioxins	TPH	GRO	Lipids	Tissue Sample Preparations	Archive	Archive	PAH-Screening	REMARKS
101-000000-000	7/15	1:15			4																				
101-000000-001	7/15	1:15			4																				
101-000000-002	7/15	1:15			4																				
101-000000-003	7/15	1:15			4																				
101-000000-004	7/15	1:15			3																				
101-000000-005	7/15	1:15			3																				
101-000000-006	7/15	1:16			6	✓	✓	✓			✓		✓	✓	✓										
101-000000-007	7/15	1:16																							
101-000000-008	7/15	1:16																							
101-000000-009	7/15	1:16																							

REPORT REQUIREMENTS <input type="checkbox"/> I. Routine Report: Method Blank, Surrogate, as required <input type="checkbox"/> II. Report Dup., MS, MSD as required <input type="checkbox"/> III. Data Validation Report (includes all raw data) <input type="checkbox"/> IV. CLP Deliverable Report <input type="checkbox"/> V. EDD	INVOICE INFORMATION P.O. # _____ Bill To: _____ TURNAROUND REQUIREMENTS <input type="checkbox"/> 24 hr. <input type="checkbox"/> 48 hr. <input type="checkbox"/> 5 Day <input checked="" type="checkbox"/> Standard (10-15 working days) <input type="checkbox"/> Provide FAX Results Requested Report Date _____	SPECIAL INSTRUCTIONS/COMMENTS: PAH Screening = 5 day turnaround X 1000
---	---	---

RELINQUISHED BY: Signature _____ Date/Time _____ Printed Name _____ Firm _____	RECEIVED BY: Signature _____ Date/Time _____ Printed Name _____ Firm _____	RELINQUISHED BY: Signature _____ Date/Time _____ Printed Name _____ Firm _____	RECEIVED BY: Signature _____ Date/Time _____ Printed Name _____ Firm _____
---	---	---	---

Firm

RELINQUISHED BY:		RECEIVED BY:		RELINQUISHED BY:		RECEIVED BY:	
Signature	Date/Time	Signature	Date/Time	Signature	Date/Time	Signature	Date/Time
Printed Name	Firm	Printed Name	Firm	Printed Name	Firm	Printed Name	Firm

Signature _____ Date/Time _____
Printed Name _____ Firm _____

SSI-IT SEDS

**International Terminal
Sediment Data Report**

**Appendix D
Data Validation Report**

Final

SSI-IT SEDS

**DATA VALIDATION REPORT
INTERNATIONAL TERMINALS
SEDIMENT DATA COLLECTION**

**Prepared for
SCHNITZER STEEL INDUSTRIES, INC**

Prepared by
Floyd Snider McCarthy, Inc.
83 South King Street
Suite 614
Seattle, Washington 98104

June 26, 2003

Final

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1.0 INTRODUCTION

Samples were collected between March 11 and 13, 2003 for the International Terminal (IT) Slip Site. Chemical and physical sediment analyses were performed by Columbia Analytical Services, Inc. (CAS) in Kelso, Washington. Conventional parameters such as grain size, total solids and total organic carbon (TOC) were analyzed according to Puget Sound Estuary Program (PSEP) guidelines (PSEP, 1996). Metals were analyzed with USEPA method 200.8, mercury was analyzed with USEPA method 7471, and organometallic compounds were analyzed according to the Krone method (Krone et al. 1989). Organics including PAHs, chlorinated hydrocarbons, phthalates, phenols, and miscellaneous extractables were analyzed with USEPA method 8270C. Pesticides were analyzed with USEPA method 8081, and PCBs with USEPA method 8082 (USEPA, 1986).

A summary data evaluation was performed on the analytical results. Evaluation was performed by Jaana Pietari of Floyd Snider McCarthy, Inc. Quality control objectives in the CAS laboratory Standard Operating Procedures were used as data quality objectives. Data qualifiers are assigned based only on the criteria reviewed, and do not include calibration or instrument performance issues. Results of the data evaluation are presented in sections 2.0 to 10.0, qualified data are summarized in section 11.0, and qualifiers are defined in Section 12.0.

Data validation was performed on the following data:

Sample ID	Lab Code	Sample Date
SDC-SS01-000007	K2301912-013	3/12/2003
SDC-SS02-000013	K2301912-020	3/12/2003
SDC-SS04-000008	K2301912-001	3/11/2003
SCD-SS05-0000012	K2301912-002	3/11/2003
SDC-SS06-000007	K2301951-001	3/13/2003
SDC-SS01-007010C ¹	K2302533-010	3/12/2003
SDC-SS02-015017C ¹	K2302533-013	3/12/2003
SDC-SS03-002004C ¹	K2302533-006	3/12/2003
SDC-SS05-014016C ¹	K2302533-003	3/11/2003
SDC-SS06-008010C ¹	K2302533-016	3/13/2003
SDC-SS01-007008	K2301912-014	3/12/2003
SDC-SS01-010011	K2301912-017	3/12/2003
SDC-SS02-013014	K2301912-021	3/12/2003
SDC-SS02-016017	K2301912-024	3/12/2003
SDC-SS03R2-001002	K2301912-008	3/12/2003
SDC-SS03R2-005006	K2301912-012	3/12/2003

Sample ID	Lab Code	Sample Date
SDC-SS05-012013	K2301912-003	3/11/2003
SDC-SS05-015016	K2301912-006	3/11/2003
SDC-SS06-007008	K2301950-001	3/13/2003
SDC-SS06-010011	K2301950-002	3/13/2003
¹ These samples were composited in the analytical laboratory.		

The table below presents abbreviations and definitions used in this report.

Abbreviation	Definition
DV	Data Validation
LCS	Laboratory Control Sample
MS	Matrix Spike
MSD	Matrix Spike Duplicate
RPD	Relative Percent Difference

2.0 CHAIN OF CUSTODY FORMS-ACCEPTABLE

The Chain of Custody (COC) forms were completely and correctly filed and all required signatures were present. Sample names have been correctly transcribed from the COC forms. All analyses have been performed as requested. The pesticide analysis for samples SDC-SS01-000007, SDC-SS02-000013 and SDC-SS06-000007 was not checked in the COC forms although the SAP specified that the analysis was to be performed. The laboratory had performed the analysis for SDC-SS01-000007 and SDC-SS02-000013. Following a written request to CAS, the pesticide analysis for SDC-SS06-000007 was conducted.

3.0 GRAIN SIZE ANALYSES

3.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The PSEP guidelines recommend one triplicate grain size analysis for every 20 samples or per batch, whichever is more frequent. Grain size analyses were performed in triplicate in each analysis batch.

3.2 Extraction and Analysis Holding Times-Acceptable

The extraction and holding time analyses for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-0000012 and SDC-SS06-000007 were met. Grain size analyses for SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-

014016C and SDC-SS06-008010C were performed from frozen samples. PSEP guidelines recommend that that samples for this analysis should not be frozen, since freezing and thawing may alter the particle size distribution. However, the sample material was composed of river sand, which is not likely to be affected by freeze and thaw processes. Therefore, using the best professional judgment, these results were not qualified.

3.3 Electronic Data Deliverable (EDD)-Acceptable

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

3.4 Overall Assessment

Laboratory triplicate variability was minimal, and should be considered in control.

4.0 TOTAL SOLIDS ANALYSES

4.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The PSEP guidelines recommend one triplicate total solids analysis for 20 samples or per batch. One duplicate analysis was performed per batch. Since the relative percent differences (RPD) were less than one percent for the duplicate results (see section 4.3), the results are considered valid and are not qualified.

4.2 Extraction and Analysis Holding Times-Acceptable

Refrigerated samples must be analyzed within 14 days of collection and frozen samples must be analyzed within six months of collection (USACE 1998). All holding time requirements were met.

4.3 Laboratory Duplicate Relative Percent Differences-Acceptable

The laboratory has specified that RPDs for duplicate or triplicate results must be less than 40 percent. The RPDs for duplicate analyses was less than one percent.

4.4 Electronic Data Deliverable-Acceptable

Total solids results were not reported in the EDD.

4.5 Overall Assessment

Total solids analysis was performed in duplicate instead of the recommended triplicate. However, the variability between the duplicate results was minimal, which indicates that the analysis was in control.

5.0 TOC ANALYSES**5.1 Laboratory Quality Control Analysis Frequencies-*Acceptable***

Each analytical batch included a method blank, a matrix spike (MS), and a laboratory control sample (LCS). No matrix spike duplicate (MSD) was run.

5.2 Extraction and Analysis Holding Times-*Acceptable*

Refrigerated samples must be analyzed within 14 days of collection and frozen samples must be analyzed within six months of collection (USACE 1998). All holding time requirements were met.

5.3 Reporting Limits-*Acceptable*

The reporting limits specified in the SAP were met.

5.4 Laboratory Blank Results-*Acceptable*

No target analytes were detected in the method blanks.

5.5 Laboratory Control Sample Recoveries (LCS)-*Acceptable*

The CAS-specified acceptable recoveries for TOC in laboratory control samples are between 85 and 115 percent. All LCS recoveries were within the limits.

5.6 Matrix Spike and Matrix Spike Duplicate Recoveries-*Acceptable*

The CAS-specified acceptable MS recoveries for TOC are between 75 and 125 percent. All MS recoveries were within the limits. No MSD samples were analyzed.

5.7 Laboratory Triplicate Relative Percent Differences-*Acceptable*

Laboratory has specified that RPDs for duplicate or triplicate results must be less than 40 percent. The RPD for triplicate TOC analyses were two percent or less than one percent.

5.8 Electronic Data Deliverable-*Acceptable*

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

5.9 Overall Assessment

All LCS and MS recoveries were within control limits, demonstrating that method accuracy was in control. The laboratory triplicate variability was minimal, which indicates the analysis method was in control.

6.0 METALS ANALYSES

6.1 Laboratory Quality Control Analysis Frequencies-*Acceptable*

The following quality control samples were analyzed with each batch: method blank, matrix spike, duplicate, and laboratory control sample.

6.2 Extraction and Analysis Holding Times-*Acceptable*

Refrigerated samples must be analyzed within six months of collection for metals analyzed by inductively coupled plasma (ICP) emission spectrometry and within 28 days of collection for mercury analysis. All holding times were met.

6.3 Reporting Limits-*Acceptable*

Reporting limits were slightly elevated to meet requirements specified in the SAP. Metals, except for mercury, were analyzed from samples that were diluted by a factor of five. The reporting limits in the SAP are for soil, and do not take into account the moisture content of the sediments, and therefore are acceptable.

6.4 Laboratory Blank Results-*Acceptable*

No target analytes were detected in the method blanks in concentrations greater than the method reporting limits (MRL).

6.5 Laboratory Control Sample Recoveries-*Acceptable*

All LCS recoveries were within the laboratory's control limits.

6.6 Matrix Spike Recoveries-*Acceptable*

All MS recoveries were within the laboratory's control limits except for antimony. The MS recoveries for antimony were 27 percent or 39 percent while laboratory's control limits for antimony are between 70 and 130 percent. Since the MS recoveries were low and no post-digestion spike was added to the samples, the associated sample results (antimony in SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012, SDC-SS06-000007, SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C) were qualified as "J"

6.7 Laboratory Duplicate Relative Percent Differences-Acceptable

The laboratory has specified that RPDs for duplicate or triplicate results must be less than 40 percent. The RPDs for duplicate samples were less than 40 percent for all analytes except for antimony for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012 and SDC-SS06-000007. The RPD for antimony was 64 percent. The associated antimony results for the samples were previously qualified as "J" (Section 6.6), therefore, no additional qualifiers were assigned.

For samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C, the RPDs for antimony, silver, and mercury were 200 percent, 50 percent and 200 percent, respectively. Both results for mercury were less than the MRL. The results for silver were 0.03 and 0.02 mg/kg while the MRL was 0.02 mg/kg. The results for antimony were 0.06 and 0.05 mg/kg while the MRL was 0.05. Since the results were either less than or near the MRLs, they are not qualified.

6.8 Electronic Data Deliverable-Acceptable

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

6.9 Overall Assessment

All LCS and the majority of MS were within control limits, demonstrating in-control method accuracy. Duplicate variability was minimal, except for antimony. Therefore, the analysis method should be considered in control.

The metals data qualifiers are summarized in Section 12.0 of this report.

7.0 ORGANICS ANALYSES

7.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The following quality control samples were analyzed with each batch: method blank, matrix spike, matrix spike duplicate, laboratory control sample and laboratory control sample duplicate.

7.2 Extraction and Analysis Holding Times-Acceptable

Refrigerated samples should be extracted within 14 days of collection and frozen samples within one year of collection. Extracted samples should be analyzed within 40 days of extraction. All holding time requirements were met.

7.3 Reporting Limits-Acceptable

Most samples met the reporting limit requirements specified in the SAP. The reporting limits were slightly elevated for SDS-SS01-000007 for all compounds and elevated by a factor of five

for bis(2-ethylhexyl)phthalate (1100 µg/kg versus 200 µg/kg specified in the SAP). Sample SDC-SS02-000013 was analyzed from a sample diluted by a factor of 10, and therefore, the reporting limits were elevated.

7.4 Laboratory Blank Results-Acceptable

No target analytes were recovered in the method blanks for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012 and SDC-SS06-000007. Di-n-butylphthalate was detected at concentrations greater than the MRL at 12 µg/kg in method blanks associated with samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, and SDC-SS06-008010C. Since di-n-butylphthalate was not detected in these samples, the results were not qualified.

7.5 Surrogate Recoveries-Acceptable

Laboratory-specified surrogate recovery limits for 2-fluorophenol, phenol-d6, nitrobenzene-d5, 2-fluorobiphenyl, 2,4,6-tribromophenol, p-terphenyl-d14 are 38-110 percent, 43-128 percent, 30-139 percent, 37-126 percent, 38-157 percent and 54-158 percent, respectively. The surrogate recoveries for most samples were within the control limits. Recoveries for 2-fluorophenol, nitrobenzene-d5 and 2-fluorobiphenyl were 28 percent, 22 percent and 18 percent, respectively in sample SDC-SS03R2-002004. Recovery for 2-fluorobiphenyl in sample SDC-SS06-008010 was 30 percent. These samples were re-extracted and reanalyzed, but they produced similar results due to matrix interferences. The original results are reported. Since two surrogates within the base/neutral fraction were out of specification in SDC-SS03R2-002004, all compounds in the base/neutral fraction for this sample are qualified. The associated results for 1,3-dichlorobenzene, 1,4-dichlorobenzene, 1,2-dichlorobenzene, hexachloroethane, benzyl alcohol, 1,2,4-trichlorobenzene, naphthalene, hexachlorobutadiene, 2-methylnaphthalene, acenaphthylene, dimethylphthalate, acenaphthene, dibenzofuran, fluorene, diethyl phthalate, N-nitrosophenylamine, hexachlorobenzene, phenanthrene, anthracene, di-n-butylphthalate, fluoranthene, pyrene, butyl benzyl phthalate, benz(a)anthracene, chrysene, di-n-octylphthalate, benzo(b)fluoranthene, benzo(k)fluoranthene, benzo(a)pyrene, indeo(1,2,3-c,d)pyrene, dbenz(a,h)anthracene and benzo(g,h,i)perylene are qualified as "UJ". The result for bis(2-ethylhexyl)phthalate is qualified as "J".

Recoveries for 2-fluorophenol and 2-fluorobiphenyl for sample SDC-SS05-014016C were also outside the control limits. The sample was also re-extracted and reanalyzed and surrogate recoveries met the control criteria. The results from reanalysis are reported.

7.6 Laboratory Control Sample Recoveries-Acceptable

LCS and LCS duplicate samples were all within the laboratory-specified control limits. The RPD for LCS and LCS duplicate was less than 40 percent, which is the laboratory's upper limit for RPD.

7.7 Matrix Spike and Matrix Spike Duplicate Recoveries-*Acceptable*

Laboratory-specified MS and MSD recoveries for phenol, 1,4-dichlorobenzene, 1,2,4-trichlorobenzene, acenaphthene, pentachlorophenol and pyrene are 17-163 percent, 25-106 percent, 47-106 percent, 54-111 percent, 29-136 percent and 53-136 percent, respectively. The MS and MSD recoveries for all compounds except for pyrene were within the control limits for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-000012 and SDC-SS06-000007. MS and MSD recoveries for pyrene were 137 percent and 204 percent, respectively.

The MS and MSD recoveries for 1,4-dichlorobenzene were 6 and 5 percent, respectively, and for 1,2,4-trichlorobenzene 22 and 20 percent, respectively, for samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C.

The results were not qualified based on the MS and MSD recoveries.

7.8 MS and MSD Relative Percent Differences-*Acceptable*

The RPD for MS and MSD for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-000012 and SDC-SS06-000007 for all compounds except for 1,4-dichlorobenzene were less than 40 percent, which is the laboratory's upper limit for RPD. The results were not qualified based on the RPD.

The RPD for 1,4-dichlorobenzene was 54 percent. The RPDs for the MS and MSD for the remaining samples were within the laboratory control limits.

7.9 Electronic Data Deliverable-*Acceptable*

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

7.10 Overall Assessment

All LCS and the majority of MS, MSD, and surrogate recoveries were within control limits, demonstrating that method accuracy was in control.

Organics data qualifiers are summarized in Section 12.0 of this report.

8.0 PESTICIDE ANALYSES

8.1 Laboratory Quality Control Analysis Frequencies-*Acceptable*

The following quality control samples were analyzed with each batch: method blank, matrix spike, matrix spike duplicate, and laboratory control sample.

8.2 Extraction and Analysis Holding Times-Acceptable

Refrigerated samples should be extracted within 14 days of collection and frozen samples within one year of collection. The extracted samples should be analyzed within 40 days of extraction. All holding time requirements were met. For re-extraction and re-analysis of DDT, a frozen sample was used for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012 and SDC-SS06-000007. Pesticides were analyzed from a frozen sample for SDC-SS06-000007.

8.3 Reporting Limits-Acceptable

Reporting limits for some analytes were slightly elevated due to matrix interferences for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012 and SDC-SS06-000007. Reporting limits for DDT re-analysis ranged from 3.4 to 6.3 µg/kg versus 1.0 µg/kg. (The reporting limit specified in the SAP is 1.0 µg/kg.) Reporting limits for sample SDC-SS02-015017C were slightly elevated. Reporting limits for the remaining samples were within the requirements specified in the SAP.

8.4 Laboratory Blank Results-Acceptable

During the initial analysis of samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008, SDC-SS05-000012 and SDC-SS06-000007, DDT was found in the method blank at concentrations greater than the MRL and therefore DDT results were not reported. No other target analytes were found in the method blank. The samples were re-extracted and reanalyzed for DDT. During the re-analysis, no target analytes were found in the method blank. No target analytes were found in the method blanks for the remaining samples.

8.5 Surrogate Recoveries-Acceptable

Laboratory-specified surrogate recoveries for tetrachloro-m-xylene and decachlorobiphenyl are 48-119 percent and 48-136 percent, respectively. Surrogate recoveries for all samples were within the control limits.

8.6 Laboratory Control Sample Recoveries-Acceptable

LCS recoveries were all within the laboratory specified control limits.

8.7 Matrix Spike and Matrix Spike Duplicate Recoveries-Acceptable

Laboratory specified MS and MSD recoveries for DDT, DDD, DDE, Aldrin, alpha-Chlordane, Dieldrin, gamma-BHC and Heptachlor are 16-175 percent, 30-170 percent, 12-197 percent, 28-155 percent, 21-161 percent, 14-183 percent, 48-138 percent and 32-142 percent, respectively. The MS and MSD recoveries for all samples were within the control limits. The limits did not apply to alpha-Chlordane, gamma-BHC and DDT due to matrix interferences in samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 and SDC-SS05-000012. For sample

SDC-SS06-000007, the limits did not apply to alpha-Chlordane and DDE due to matrix interferences.

8.8 MS and MSD Relative Percent Differences-Acceptable

RPDs for MS and MSD for all compounds were within the laboratory-specified control limit.

8.9 Sample Confirmation

The pesticide analysis was conducted with a dual column setup. The laboratory has specified a confirmation comparison criterion of 40 percent, which is the upper limit for differences between results from the two columns. The confirmation comparison criterion was exceeded for Aldrin in sample SDC-SS01-000007 and for DDE in samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008. The result reported by the laboratory was the greater of the two values. The analyte results in samples that exceeded the confirmation criterion were qualified as "P" by the laboratory. These results should be considered estimates and are qualified as "J". Also, the criterion was exceeded for DDD in SDC-SS05-000012. However, the analyte was less than the MRL and was qualified as "J" by the laboratory.

8.10 Electronic Data Deliverable-Acceptable

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

8.11 Overall Assessment

All LCS, MS, MSD and surrogate recoveries were within control limits, demonstrating that method accuracy was in control. Sample confirmation criteria were met for most of the analytes.

Pesticide data qualifiers are summarized in Section 12.0 of this report.

9.0 PCB ANALYSES

9.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The following quality control samples were analyzed with each batch: method blank, matrix spike, matrix spike duplicate and laboratory control sample.

9.2 Extraction and Analysis Holding Times-Acceptable

Refrigerated samples should be extracted within 14 days of collection and frozen samples within one year of collection. The extracted samples should be analyzed within 40 days of extraction. All holding time requirements were met.

9.3 Reporting Limits-Acceptable

Reporting limits for some samples were elevated slightly compared to those specified in the SAP. However, the reporting limits in the SAP are for soil, and do not take into account the moisture content of the sediments, and therefore are acceptable.

9.4 Laboratory Blank Results-Acceptable

No target analytes were recovered in the method blanks.

9.5 Surrogate Recoveries-Acceptable

The laboratory-specified surrogate recovery for decachlorobiphenyl is 57-149 percent. Most surrogate recoveries were within the control limits. The decachlorobiphenyl surrogate recovery for sample SDC-SS05-014016C exceeded the laboratory control limits. The sample was re-extracted and reanalyzed. The surrogate recoveries for the reanalyzed sample were all within the control limits. The laboratory reported results from the reanalysis.

9.6 Laboratory Control Sample Recoveries-Acceptable

LCS recoveries were all within the laboratory specified control limits.

9.7 Matrix Spike and Matrix Spike Duplicate Recoveries-Acceptable

Laboratory specified MS and MSD recoveries for Aroclor 1016 and Aroclor 1260 are 31-147 percent and 29-163 percent. The MS and MSD recoveries for most samples were within the control limits. MS recoveries for Aroclor 1016 and 1260 and MSD recovery for Aroclor 1016 in sample SDC-SS06-000007 were outside the control limits (applicable to samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-000012 and SDC-SS06-000007). The MS recovery for Aroclor 1016 and 1260 were 159 percent and 165 percent, and the MSD recovery for Aroclor 1016 was 148 percent. The results were not qualified based on the MS and MSD recoveries.

9.8 MS and MSD Relative Percent Differences-Acceptable

RPDs for MS and MSD for all compounds were within the laboratory-specified control limits.

9.9 Sample Confirmation

The sample confirmation criterion of 40 percent was exceeded for Aroclor 1254 in sample SDC-SS02-000013. The associated sample result is qualified as "J"

9.10 Electronic Data Deliverable-Acceptable

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

9.11 Overall Assessment

All LCS and surrogate recoveries and most MS and MSD recoveries were within control limits, demonstrating that method accuracy was in control. Sample confirmation criterion was met for most samples and analytes.

PCB data qualifiers are summarized in Section 12.0 of this report.

10.0 ORGANOTINS

10.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The following quality control samples were analyzed with each batch: method blank, matrix spike, matrix spike duplicate and laboratory control sample.

10.2 Extraction and Analysis Holding Times-Acceptable

Refrigerated samples should be analyzed within 14 days of sample collection. The sample holding times were exceeded for SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 and SDC-SS05-000012. Initially, these samples were extracted and analyzed within the holding time requirements. However, re-extraction exceeded the holding time requirement by two days. The laboratory reported the initial results and re-extraction results. The initial results were rejected (see Section 10.4) despite the holding time exceedance. Due to the stability of these compounds, the holding time exceedance should not have a significant impact on the results.

Samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C were analyzed from frozen samples. PSEP guidelines do not specify whether frozen samples can be used for this analysis. Due to the stability of these compounds, it is judged that the results are valid and are not qualified.

10.3 Reporting Limits-Acceptable

Reporting limits requirements specified in the SAP for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-000012 and SDC-SS06-000007 were met except for the initial analysis of tri-n-butyltin from sample SDC-SS01-000007.

Reporting limits for samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C were slightly elevated compared to those specified in the SAP. The reporting limits in the SAP are for soil, and do not take into account the moisture content of the sediments, and therefore are acceptable.

10.4 Laboratory Blank Results-Acceptable

Analytes were not recovered from the laboratory blank. However, the surrogate recovery in the method blank for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-0000012 and SDC-SS06-000007 was 3 percent, which is greater than the laboratory's control limits for tri-n-propyltin (22-113 percent). Samples were re-extracted and analyzed. No analytes were recovered in the method blank, and the surrogate recovery in the method blank was within laboratory's control limits. Original results were reported for SDC-SS06-000007 while original results and results from re-analysis were reported for SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 and SDC-SS05-0000012. The original results for SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 and SDC-SS05-0000012 were rejected in favor of the more accurate results.

The surrogate recovery in the method blank for samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C was 17 percent, which was also less than the laboratory control limits. Samples were not re-extracted because no analytes were recovered in the samples. The associated results for tetra-n-butyltin, tri-n-butyltin, di-n-butyltin and n-butyltin for these samples were qualified as "UJ".

10.5 Surrogate Recoveries-Acceptable

Laboratory-specified surrogate recovery for tri-n-propyltin is 22-113 percent. Surrogate recoveries were within the control limits in all samples.

10.6 Laboratory Control Sample Recoveries-Acceptable

LCS recoveries were all within the laboratory-specified control limits.

10.7 Matrix Spike and Matrix Spike Duplicate Recoveries-Acceptable

Laboratory-specified MS and MSD recoveries for tetra-n-butyltin, tri-n-butyltin, di-n-butyltin and n-butyltin are 25-125 percent, 12- 138 percent, 10-155 percent and 10-99 percent, respectively. During the initial analysis the MS and MSD recoveries were within control limits for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-0000012 and SDC-SS06-000007. Recoveries for all MSD compounds were greater than the control criteria for a Batch Quality Control sample for the analysis of the re-extracted samples. The sediment sample that received the matrix spikes was not one of the samples collected in this study.

MS and MSD recoveries for tetra-n-butyltin were 21 percent, and for n-butyltin 2 and 6 percent, respectively, for samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C. The laboratory suspected matrix interferences with these samples. No results were qualified based on the MS and MSD recoveries.

10.8 MS and MSD Relative Percent Differences-Acceptable

RPDs for MS and MSD for all compounds were within the laboratory-specified control limits for samples SDC-SS01-000007, SDC-SS02-000013, SDC-SS04-000008 SDC-SS05-000012 and SDC-SS06-000007

RPD for MS and MSD for n-butyltin was 115 percent, which is greater than the laboratory specified control limit for samples SDC-SS01-007010C, SDC-SS02-015017C, SDC-SS03R2-002004C, SDC-SS05-014016C and SDC-SS06-008010C. No results were qualified based on the MS and MSD RPDs.

10.9 Sample Confirmation

The organotin analysis was conducted with a dual column setup. The laboratory has specified a confirmation comparison criterion of 40 percent, which is the upper limit for differences between results from the two columns. The confirmation comparison criterion was exceeded for di-n-butyltin in samples SDC-SS04-000008 and in SDC-SS02-000013 during the initial analysis. The greater of the two values is reported, and the results for SDC-SS02-000013 were qualified by the laboratory as "P". The results for SDC-SS04-000008 were not qualified by the laboratory. For this report, the results for these two samples are not qualified since the results are rejected.

10.10 Electronic Data Deliverable-Acceptable

If the results were correctly transcribed in the EDD, approximately 10 percent of the samples were checked. No discrepancies were noted.

10.11 Overall Assessment

All LCS, surrogate and most MS and MSD recoveries met the control criteria, demonstrating that method accuracy was in control.

11.0 PAHS

The following samples were analyzed for PAHs: SDC-SS01-007008, SDC-SS01-010011, SDC-SS02-013014, SDC-SS02-016017, SDC-SS03R2-001002, SDC-SS03R2-005006, SDC-SS05-012013, SDC-SS05-015016, SDC-SS06-007008 and SDC-SS06-010011.

11.1 Laboratory Quality Control Analysis Frequencies-Acceptable

The following quality control samples were analyzed with each batch: method blank, matrix spike, matrix spike duplicate, laboratory control sample and laboratory control sample duplicate.

11.2 Extraction and Analysis Holding Times- Acceptable

Refrigerated samples should be extracted within 14 days of collection and frozen samples within one year of collection. Extracted samples should be analyzed within 40 days of extraction. All holding time requirements were met.

11.3 Reporting Limits-Acceptable

All samples met the reporting limit requirements specified in the SAP.

11.4 Laboratory Blank Results-Acceptable

No target analytes were recovered in the method blanks.

11.5 Surrogate Recoveries-Acceptable

Laboratory-specified surrogate recovery limits for biphenyl-d10, fluorene-d10, fluoranthene-d10 and p-terphenyl-d14 are 39-99 percent, 43-98 percent, 52-108 percent and 54-158 percent, respectively. The surrogate recoveries for all samples were within the control limits.

11.6 Laboratory Control Sample Recoveries-Acceptable

LCS and LCS duplicate recoveries were all within laboratory-specified control limits.

11.7 Matrix Spike and Matrix Spike Duplicate Recoveries-Acceptable

The MS and MSD recoveries for all compounds were within laboratory-specified control limits.

11.8 MS and MSD Relative Percent Differences-Acceptable

RPDs for indeno(1,2,3-c,d)pyrene, dibenz(a,h)anthracene and benzo(g,h,i)perylene in samples SDC-SS06-007008 and SDC-SS06-010011 were greater than the laboratory-specified control limit of 40 percent. Their respective RPDs were 41 percent, 43 percent and 43 percent. RPDs for other compounds in these two samples were generally greater than 30 percent. The RPDs for the remaining samples were within the laboratory-specified control limit.

11.9 Electronic Data Deliverable-Acceptable

Approximately 10 percent of the sample results were compared to the laboratory report. No discrepancies were noted.

11.10 Overall Assessment

All LCS, surrogate, MS and MSD recoveries were within control limits, demonstrating that method accuracy was in control.

12.0 SUMMARY OF QUALIFIED DATA

Table 1 (attached) presents data qualifiers assigned during the data validation process. Table 1a presents definitions of those qualifiers.

13.0 REFERENCES

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Table 1 Summary of Qualified Data			
Sample ID	Analyte	DV Qualifier	Qualifier Reason
SDC-SS01-000007	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS02-000013	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS04-000008	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS05-0000012	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS06-000007	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS01-007010C	Antimony	UJ	Low MS recovery, no post-digestion spike
SDC-SS02-015017C	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS3R2-002004C	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS05-014016C	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS06-008010C	Antimony	J	Low MS recovery, no post-digestion spike
SDC-SS01-000007	Aldrin	J	Sample confirmation criterion exceeded
SDC-SS01-000007	DDE	J	Sample confirmation criterion exceeded
SDC-SS02-000013	DDE	J	Sample confirmation criterion exceeded
SDC-SS04-000008	DDE	J	Sample confirmation criterion exceeded
SDC-SS02-000013	Aroclor 1254	J	Sample confirmation criterion exceeded
SDC-SS01-000007	Tetra-n-butyltin	R1	More accurate result
SDC-SS01-000007	Tri-n-butyltin	R1	More accurate result
SDC-SS01-000007	di-n-butyltin	R1	More accurate result
SDC-SS01-000007	n-butyltin	R1	More accurate result
SDC-SS02-000013	Tetra-n-butyltin	R1	More accurate result
SDC-SS02-000013	Tri-n-butyltin	R1	More accurate result
SDC-SS02-000013	di-n-butyltin	R1	More accurate result
SDC-SS02-000013	n-butyltin	R1	More accurate result
SDC-SS04-000008	Tetra-n-butyltin	R1	More accurate result
SDC-SS04-000008	Tri-n-butyltin	R1	More accurate result
SDC-SS04-000008	di-n-butyltin	R1	More accurate result
SDC-SS04-000008	n-butyltin	R1	More accurate result
SDC-SS05-0000012	Tetra-n-butyltin	R1	More accurate result
SDC-SS05-0000012	Tri-n-butyltin	R1	More accurate result

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Table 1 Summary of Qualified Data			
Sample ID	Analyte	DV Qualifier	Qualifier Reason
SDC-SS05-0000012	di-n-butyltin	R1	More accurate result
SDC-SS05-0000012	n-butyltin	R1	More accurate result
SDC-SS01-007010C	Tetra-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS01-007010C	Tri-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS01-007010C	di-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS01-007010C	n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS02-015017C	Tetra-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS02-015017C	Tri-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS02-015017C	di-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS02-015017C	n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS03R2-002004C	Tetra-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS03R2-002004C	Tri-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS03R2-002004C	di-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS03R2-002004C	n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS05-014016C	Tetra-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS05-014016C	Tri-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS05-014016C	di-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS05-014016C	n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS06-008010C	Tetra-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS06-008010C	Tri-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS06-008010C	di-n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS06-008010C	n-butyltin	UJ	Surrogate recovery in method blank
SDC-SS03R2-002004C	1,3-dichlorobenzene	UJ	Surrogate recovery
SDC-SS03R2-002004C	1,4-dichlorobenzene	UJ	Surrogate recovery
SDC-SS03R2-002004C	1,2-dichlorobenzene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benzyl alcohol	UJ	Surrogate recovery
SDC-SS03R2-002004C	Hexachloroethane	UJ	Surrogate recovery
SDC-SS03R2-002004C	1,2,4-trichlorobenzene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Naphthalene	UJ	Surrogate recovery

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Table 1 Summary of Qualified Data			
Sample ID	Analyte	DV Qualifier	Qualifier Reason
SDC-SS03R2-002004C	Hexachlorobutadiene	UJ	Surrogate recovery
SDC-SS03R2-002004C	2-methylnaphthalene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Acenaphthylene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Dimethyl phthalate	UJ	Surrogate recovery
SDC-SS03R2-002004C	Acenaphthene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Dibenzofuran	UJ	Surrogate recovery
SDC-SS03R2-002004C	Fluorene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Diethyl phthalate	UJ	Surrogate recovery
SDC-SS03R2-002004C	N-nitrosophenylamine	UJ	Surrogate recovery
SDC-SS03R2-002004C	Hexachlorobenzene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Phenanthrene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Anthracene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Di-n-butyl phthalate	UJ	Surrogate recovery
SDC-SS03R2-002004C	Fluoranthene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Pyrene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Butyl benzyl phthalate	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benz(a)anthracene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Chrysene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Di-n-octyl phthalate	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benzo(b)fluoranthene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benzo(k)fluoranthene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benzo(a)pyrene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Indeno(1,2,3-c,d)pyrene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Dibenz(a,h)anthracene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Benzo(g,h,i)perylene	UJ	Surrogate recovery
SDC-SS03R2-002004C	Bis(2-ethylhexyl)phthalate	J	Surrogate recovery

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Table 1a Qualifiers and Definitions	
DV Qualifier	Definition
U	The material was analyzed for, but was not detected at levels greater than the level of the associated value.
UM	Indicates an analyte that was not detected, and where a matrix effect was present.
J	The associated value is an estimate.
UJ	The material was analyzed for, but was not detected at levels greater than the level of the associated value. The quantitation limit is approximate and may or may not represent the actual limit of quantitation.
R1	This sample result has been rejected in favor of a more accurate and/or precise result. The other result should be used.